Drug Markets

July 1929

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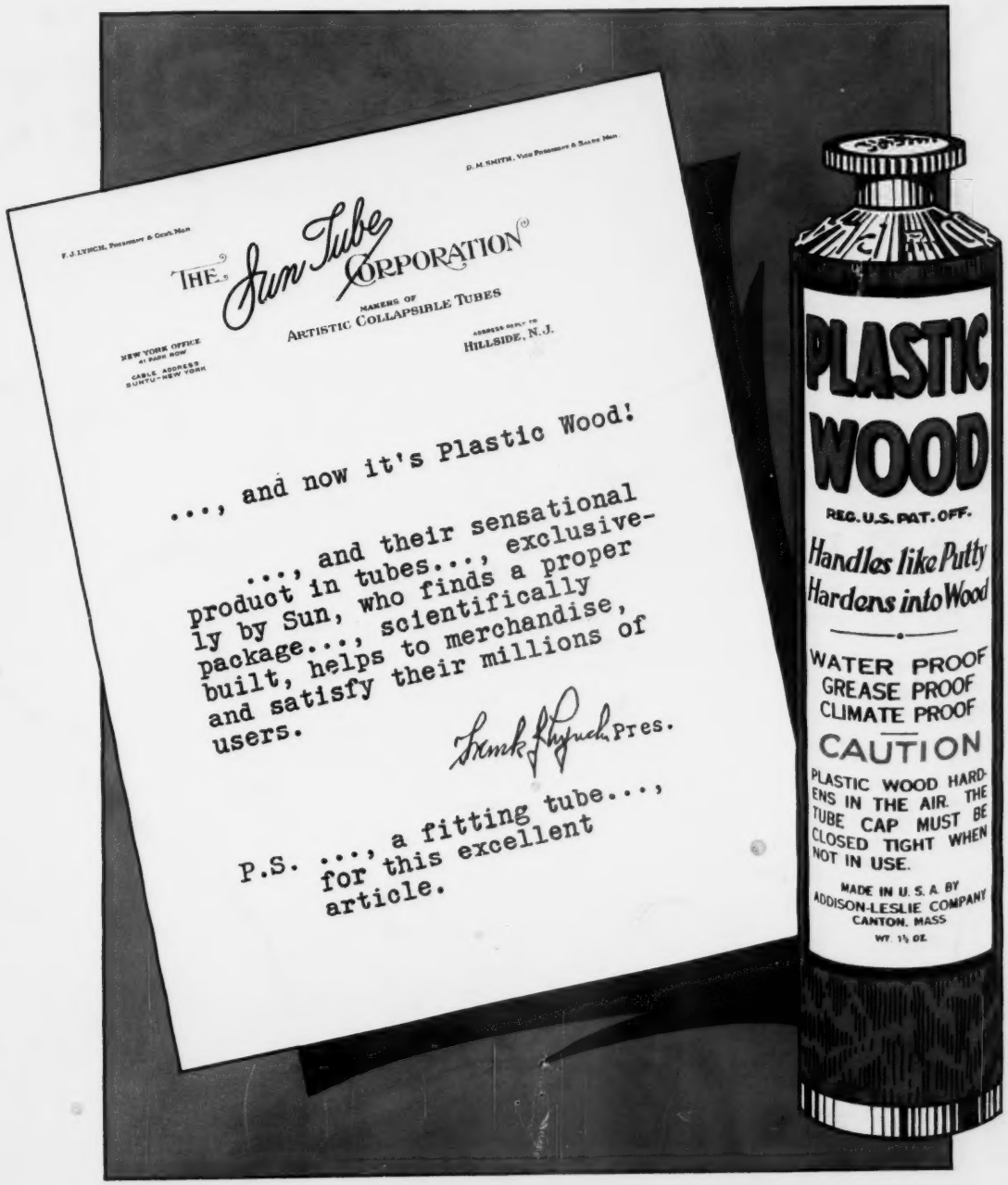
The Magazine of the Manufacturing Drug Trade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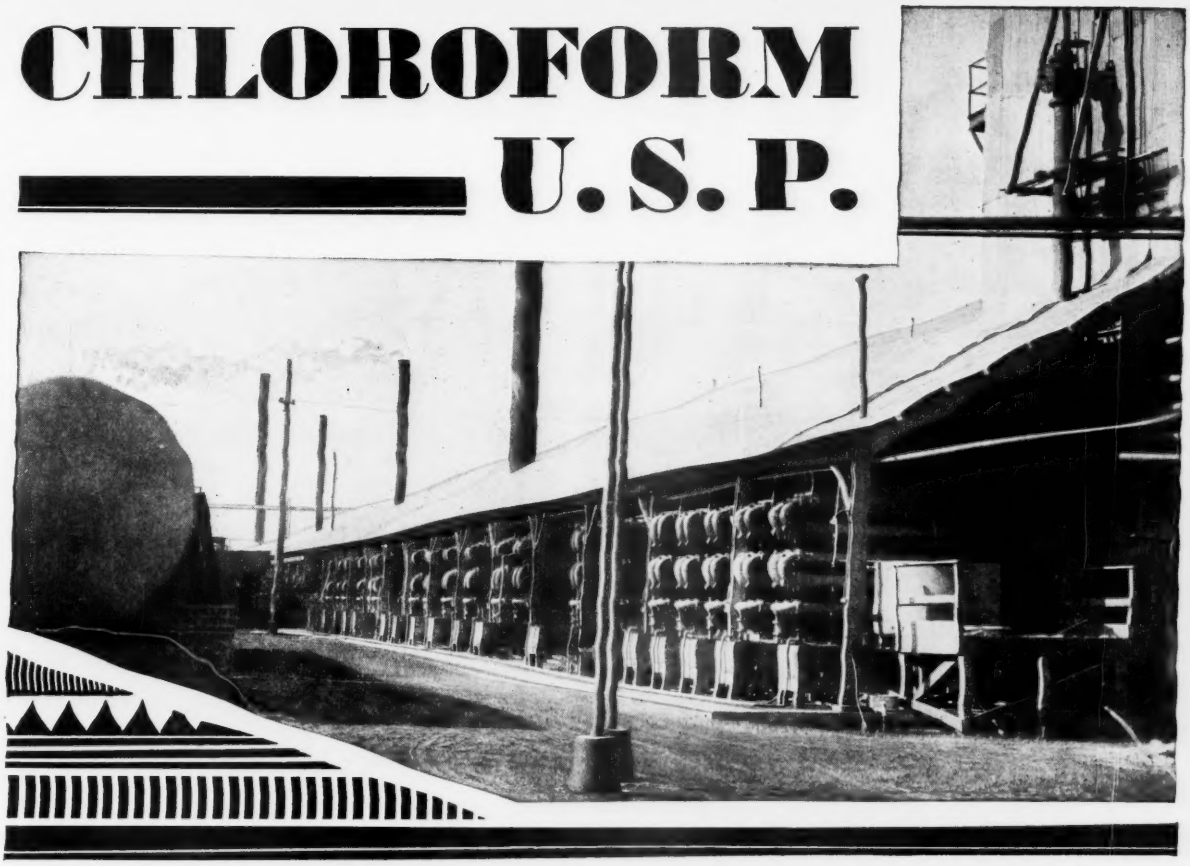

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July 1929

Drug Markets

Established 1914

The Magazine of the Manufacturing Drug Trade

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Coming Issues

Senator Smoot's Proposal to include regulation of advertising copy of drug products within the scope of the Food & Drugs Act has been bitterly attacked by many representatives of the drug manufacturing industry.

We Believe that such regulation would be an excellent step in raising the standards and the public acceptance of these standards of the drug industry still further.

The Department of Agriculture is strongly behind the move to give to the Department control over advertising and is probably of the opinion that the control would be administered in the same way as label statements are regulated.

We Propose to Outline how the acceptance of the Smoot amendment can be made a real opportunity to have the Foods & Drugs Act administered by a board instead of by an individual.

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VOL. XXV NUMBER 1

DRUG MARKETS, INC.
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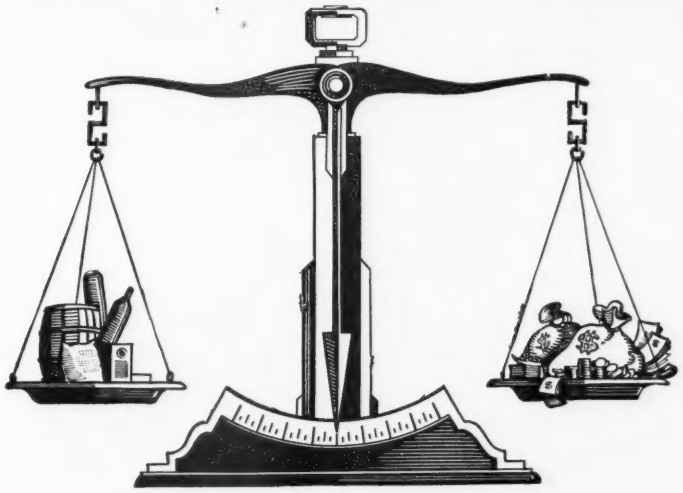
VALUE



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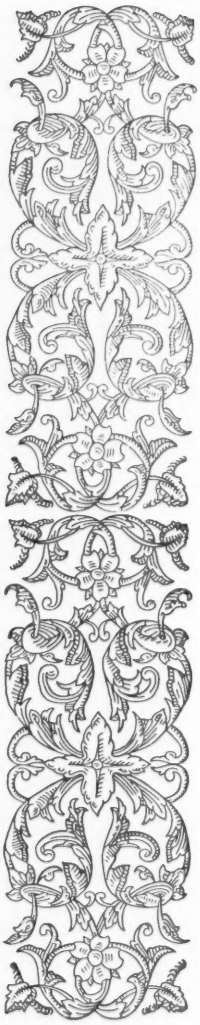

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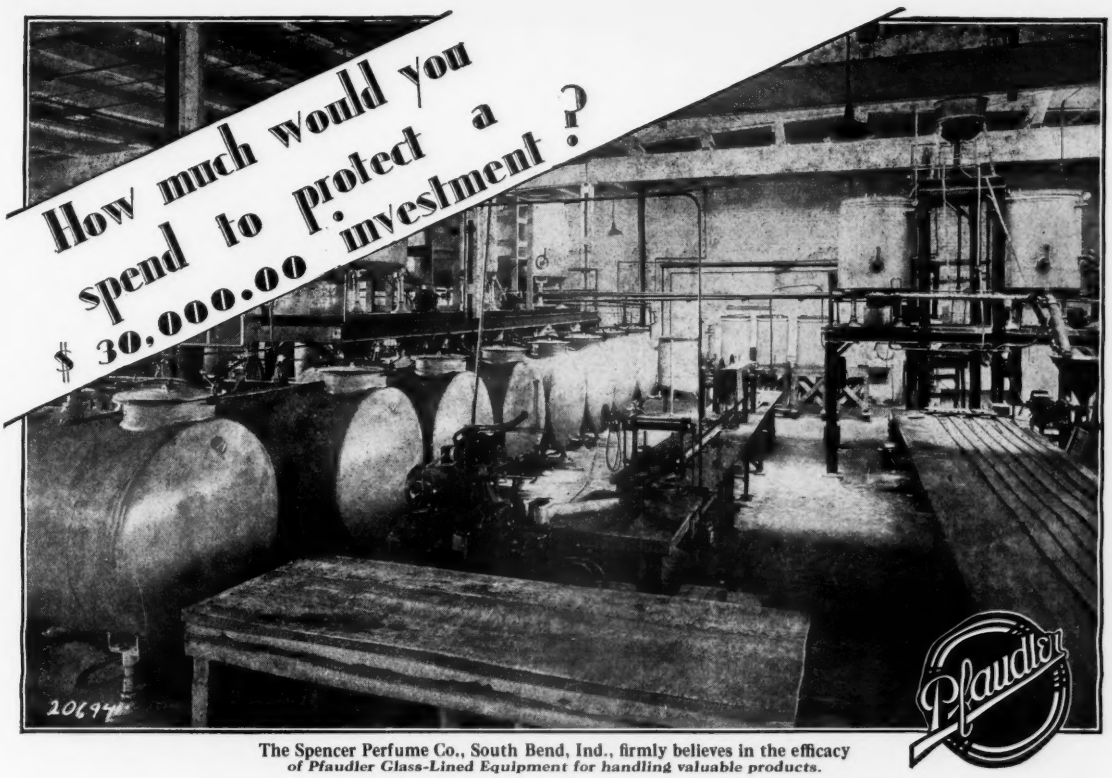

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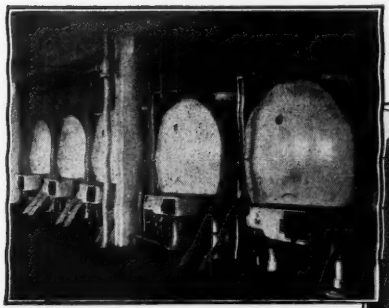

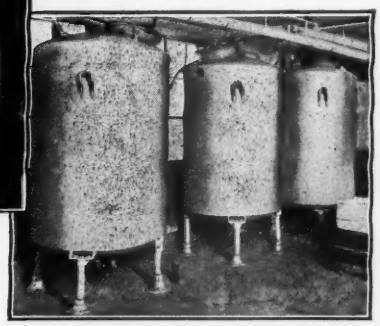

Above, partial view of the Pfaudler Equipment at Ar. Winarick, Inc., New York City, for storing essential oils. *Right,* California Perfume Co., Suffern, N. Y. Pfaudler Equipment also used here for storing essential oils and similar products.

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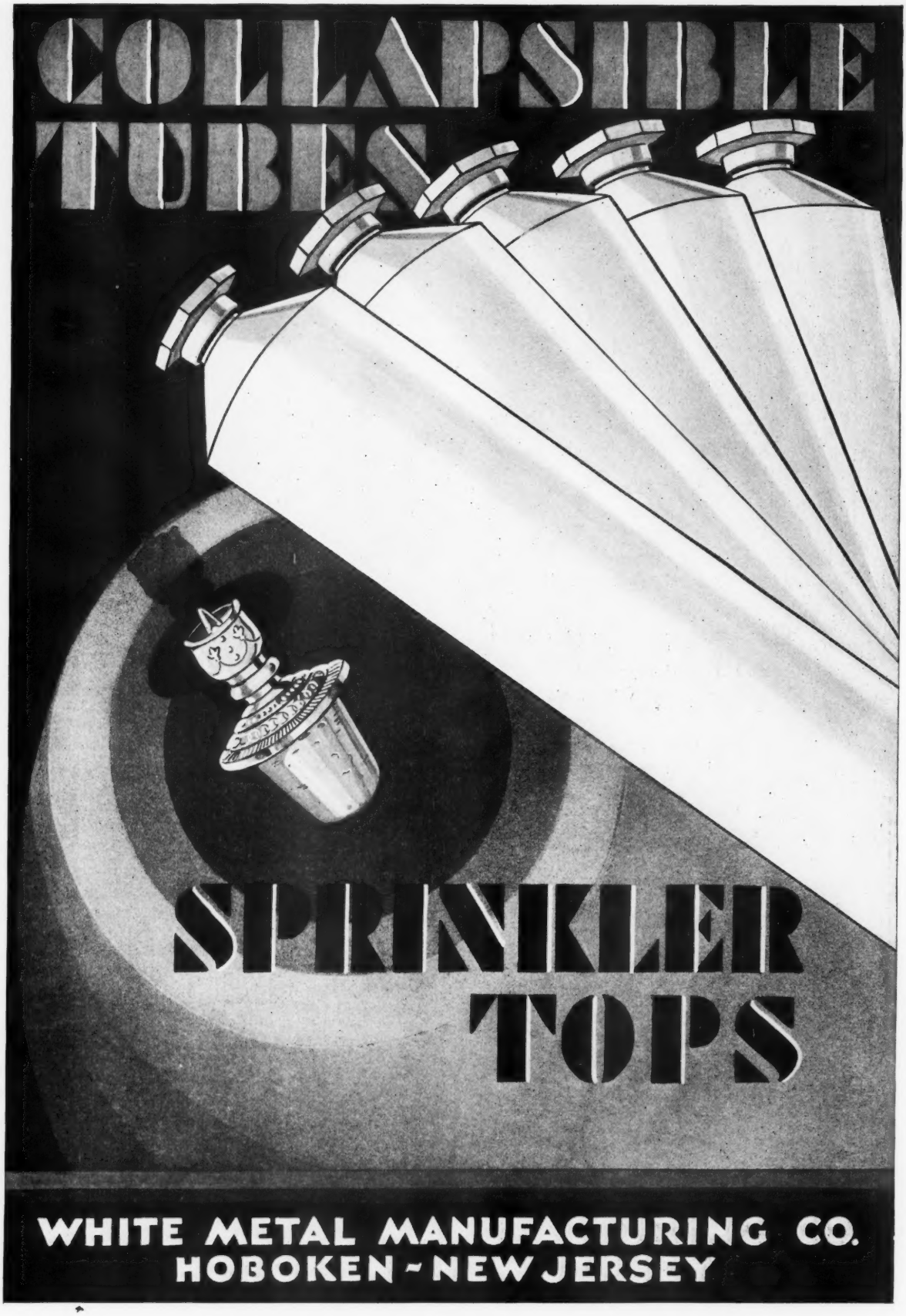
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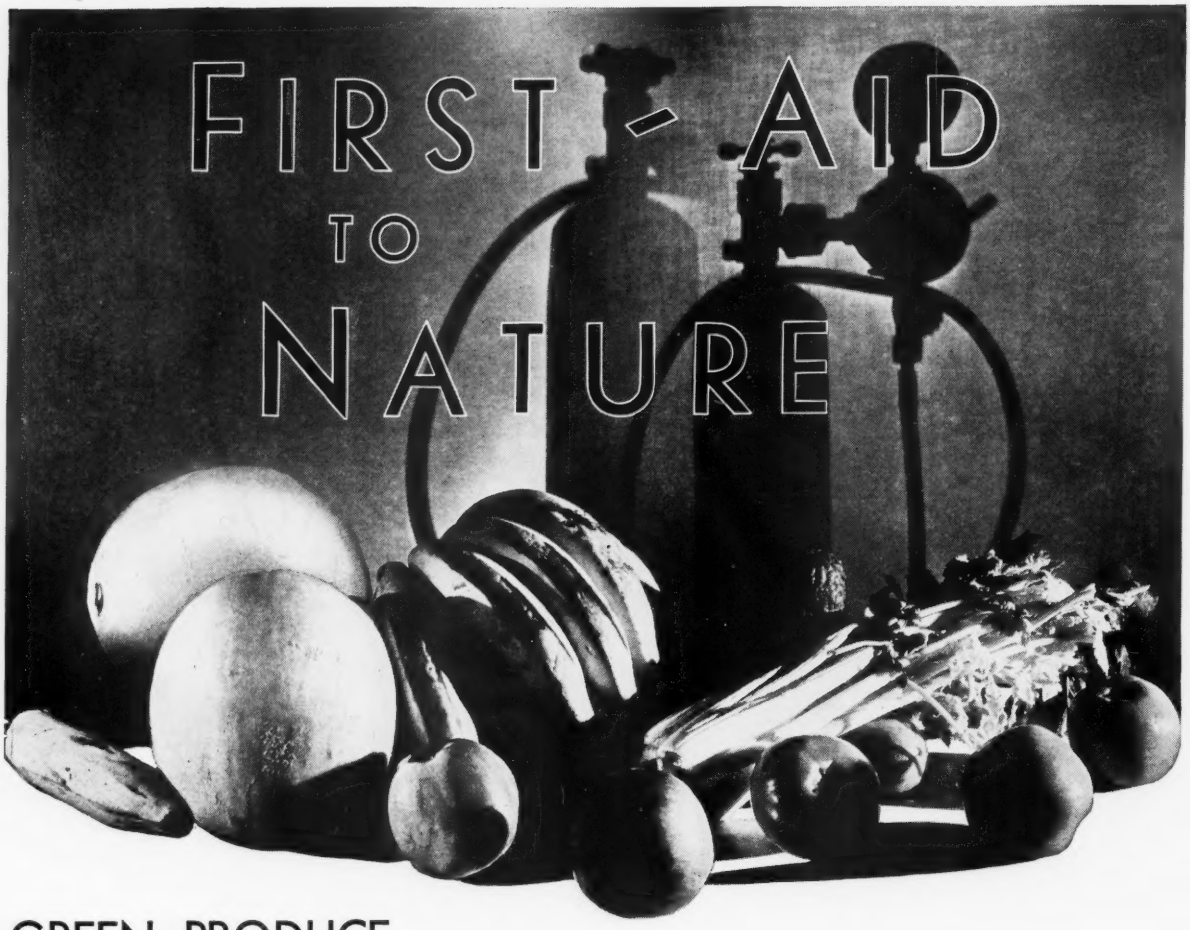

GREEN PRODUCE

RIPENED OVERNIGHT BY THIS MODERN MIRACLE-GAS!

FAR back among the fertile plains of Iowa, a humble truck gardener regularly performs a miracle . . .

In a corner of his farm he picks tomatoes —sound, but pink and immature—unfit for market. Then overnight, as if by magic, these unripe tomatoes become brightest red—succulent, tempting, fit for the finest tables. The secret? A few cubic feet of tasteless, odorless, harmless gas.

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MALLINCKRODT CHEMICAL WORKS

SAINT LOUIS MONTREAL PHILADELPHIA NEW YORK

Drug Markets

Vol. XXV JULY 1929 No. 1

For A Better Industry

In his proposed amendment to the Food & Drugs Act designed to act as a curb on the famous "anti-sweet" advertising campaign, Senator Smoot has raised a question regarding regulation of foods and drugs that must be frankly and fearlessly answered. The Senator proposes not only to include tobacco products within the scope of the act, but—in order to rigidly control the objectionable advertising copy of tobacco interests—also to extend the scope of the act definitely to include complete regulation of the advertising activities of makers of all products regulated by the act. Thus control of advertising of drug products—as well as of food products—would come into the same hands as now regulate label statements and all other phases of drug control.

The question that the Senator has raised is this: Should misleading advertising of foods and drugs be considered merely a matter of unfair competition within the scope of the Federal Trade Commission Act; or should it be considered a matter of public health and safety within the scope of the Food & Drugs Act ? We believe—and we say so frankly—that advertising of these products is none other than a matter of public health and safety just as much as any other phase of food and drug regulation is. And what drug manufacturer can rightly deny that promotion of health is foremost in the conduct of his business?

There is nothing to be gained by the drug manufacturing industry dodging this issue, any more than there is to be gained by rejecting any basic principle designed to make the drug manufacturing industry a better industry, in which competition will be on a steadily mounting plane, and in which the public will have increasing confidence. The only fear that reputable manufacturers can have of ready acceptance of the Smoot proposal is that this new phase of the act will be enforced by a dictator enforcing his own personal views in the same manner as other phases of the act are now enforced.

The drug manufacturing industry can, if it will, make the acceptance of the Smoot proposal the opportunity to have the method of enforcement of the entire act changed. In accepting this closer control of the industry for the further public — and the industry's — good, the manufacturers can rightly demand assurance that enforcement of the entire act be placed on a fair, equitable, and *intelligent* basis. In being honest with themselves, they can make a drive to have the power of enforcement of the act given over to a board representing all interested parties—once and for all eliminating the uncertainty and confusion of the future that is steadily increasing.

New Pharmacology

The appearance of Dr. Linn J. Boyd, of New York Homeopathic Medical College and Flower Hospital, at the Old Point Comfort meeting of the A. P. M. A. created something of a sensation among his listeners. The sharp attention that was paid to every word that Dr. Boyd uttered indicated very plainly the intense interest among drug manufacturers in facts concerning botanicals.

It is to be regretted that more time was not available for complete discussion of the multitude of questions that arose in the manufacturers' minds and that went without answers. But the minds of those manufacturers present have had planted in them the germ of a desire for the knowledge that must be secured concerning certain drugs before medicine can completely come into its own.

Dr. Boyd on that occasion, and Dr. Scoville on the occasion of his acceptance of the Remington Medal, both made the statement that there is a renaissance going on in therapeutics. Dr. Boyd went further and stated that the public is reacting sharply against the methods of modern doctors who tell their patients to go home and "get well or die," giving them no medical treatment.

The drug manufacturing industry—from all indications—is on the fringe of an ear that is to increase its recognition and its usefulness in the field of medicine to new limits. That pharmacology will be completely rewritten within the next five years is another statement of Dr. Boyd. The demands are coming for drug products—but the same products may not be used. To stay on the top of the heap in the years just ahead is going to be a tougher problem to solve than the distribution problem ever was.

A More Confident Attitude

The fear complex which manufacturers generally displayed about six months ago toward a threatened flow of their merchandising through the self-seeking channels of distribution has very largely disappeared. The manufacturers are again standing on their feet and relegating distribution problems to their proper place of importance rather than submerging all other problems as insignificant. The attitude that if distribution is to be retarded there is no use doing anything else, does not seem to be in existence any more.

The reasons for this recovery of confidence is not far to seek. The manufacturers, generally speaking, have increased the volume of their business despite the changes that have taken place. The pharmaceutical market, it is true, is in a deplorable price condition largely due to the successful efforts of the distributors to market their own lines in greatly increased measure. But the leading manufacturers are rapidly dropping overboard these sharply competitive products and directing their attention to the further development of products that will stand heavy advertising appropriations.

Mass distribution should hold no terror for the manufacturer who is rightly entitled to a place in the market. If distributing channels can make pharmaceuticals just as good and market them cheaper than the manufacturers, then the distributors will get the business. If the manufacturers want to hold this business then they must make these products better than the distributors, or sell them more cheaply.

The whole problem is one of economic readjustment. The manufacturers will continue strong in the things that they can do better or more cheaply than anyone else. Those manufacturers and distributors who are of the opinion that distribution channels can dictate what will be sold will eventually come to realize that the demands of an enlightened public always follow the same path of approach.

Call a Fair Trade Conference

Although the drug trade is a multi-sided affair, with manufacturers, wholesalers and retailers of different types and varying interests, the most good can come to all of them only when they are working in harmony. There is no use for some of one type independent retailers to follow certain tactics when, by so doing, they only lay themselves open to attack from the other groups of retailers as well as from others in their own group. Likewise there is no use for wholesalers to agree on trade practices when they cannot bind a large majority of the industry to the same practices. The same thing goes for the manufacturers.

The three necessary steps in supplying drug products to the public—manufacturing, distributing, retailing—are all so closely allied in the scheme of things it is in the relations of these groups to each other that the unfair practices arise. Therefore, manufacturers, wholesalers, retailers cannot organize in separate groups to control the trade as a whole. Any action that will be effective must include the majority representation of all types of each of the three groups.

Such an agreement has been accomplished by the grocery trade. A code of ethics defining the unfair trade practices that should be eliminated was recently drawn up by the grocery trade at its conference with the Federal Trade Commission. Further conferences of the grocery trade are coming. The chain stores are working in close harmony with the independent retailers. The grocery trade will go definitely forward as a result of this progressive step.

But the drug trade worries along in the same old way. Mergers in the retail, wholesale and manufacturing branches of the industry continue to cause the part of the trade that has not yet merged, to wonder what new schemes the latest merger will employ in crushing competition. All branches of the drug trade are in an uncertain, unsettled condition.

While the manufacturers and private brand wholesalers and chain stores are now quite actively engaged in uniting to fight the common cause of less pressure from the Department of Agriculture in label statements control, they should not lose sight of the fact that they have not as yet eliminated the distribution tangle. How much smoother would be the path of the drug manufacturing industry if unfair competition was defined for all to read. And if the trade agreed among itself to discontinue these practices. This can be accomplished by the calling of a fair trade practices conference by the Federal Trade Commission. It will take time to have the conference called after application is made. Let us make this application now.

International Pharmacy

The extension of the membership of the A. P. M. A. beyond the borders of our own country and into Canada and England marks a new trend in the course of manufacturing pharmacy. Heretofore, this association, as do other drug manufacturing associations, closed their membership to companies owned at least in the majority, in the United States. Now the A. P. M. A. has two active member firms owned and doing business in Canada, as well as one company owned in England but doing business in this country as well as in Canada.

It is true that pharmacy and medicine should know no national boundary lines. These professions are above the selfishness that usually makes up national commercial activities. There is—and there should be—a wide community of interest between all countries in every advancement made in the treatment of the sick.

However, the associations of drug manufacturers in these countries are interested not only in the strictly pharmacal side of their business. They do have scientific sections that whose determinations are just as interesting and just as valuable to manufacturers of any other country as they are to manufacturers of the United States, But problems of sales, advertising, distribution, legislation, government regulation, and other problems that arise in the very course of business, and quite apt to be distinctly different in Winnipeg or Glasgow than they are in Jersey City.

While the move to include these foreign firms is laudable in its purpose, we are not yet fully convinced that it will work to the advantage of all concerned. But it seems to us that the advantages accruing to the foreign members is sharply less than that which accrues to the members of our own country.

The Potassium Iodide Reduction

Some time back we called attention to the fact that the increased activities of the Prohibition Department in restricting the sale of gallon bottles of tincture of iodine were quite liable to cause potassium iodide manufacture to go completely on a legitimate basis and thus advance the price. Surprisingly the price stayed where it was until the middle of last month at which time it went sharply lower. The question of whether the Prohibition Department failed in its restrictive measures can be answered with an emphatic "no", but the market has suffered an almost disastrous hang-over that is bound eventually to disappear.

When we called attention to this condition, sellers of potassium iodide—knowing that no money would be made at the then prevailing prices if illegitimate sources of the raw material were removed—proceeded to stock the product heavily. They bought what they could at low prices. For the several months since this happened the market has been sharply competitive, being held down by the presence of this very material.

The trick of cutting the market ten cents per pound inside the schedule persisted, much to the disturbance of those legitimate manufacturers who had bought none of the available cheap material. These makers probably were of the opinion that the price shading sellers were attempting to force some manufacturers to quit the market meanwhile taking a slight loss on their output. As a matter of fact these

cheap sellers were in a position to shade the market and still make money. But they would rather shade high prices than they would low ones, and they were anxious for higher prices to come.

The manufacturing sellers, however, have made a courageous attempt to end the price cutting and stabilize the market. They have reduced the price twenty-five cents per pound below the former schedule at which no profit could be realized. They are doubtless of the opinion that price cutting must stop at some level and that the price cutters will beg for mercy.

As the situation appears to an outside observer, the low priced material will be disposed of at any price within reason. Or if the price goes too low, those in possession of large stocks of low priced material can readily hold their stocks until conditions improve. Before the market can be stabilized in a manner satisfactory to manufacturers this low priced material must pass into consuming channels. After this has taken place prices can be placed at a cost plus profit level. In the meanwhile consumers can take advantage of the situation by always keeping a goodly stock of potassium iodide on hand.

The Milk of Magnesia Case

The Charles H. Phillips Chemical Company was at one time the sole owner of the trade mark "Milk of Magnesia." Unfortunately for the present owners of this company, the mark was very widely infringed and never defended. Therefore, in the opinion of trade mark experts in this country, the right of the infringers to use the mark is permanent, for if a trade mark is not protected from infringement by the owner, it becomes the property also of those who use it over a long period.

Then why the fight two years ago by McKesson & Robbins to prove the mark invalid ? And why the new attempt started in a Federal Court last month ? The answer is that in export markets trade mark laws are different and the Governments of many of these countrys protect the mark for the owner. Therefore, "Milk of Magnesia" to be sold in many of these countries must be of Phillips manufacture—since this company still is sole owner of the mark. And since the mark was first granted in this country, it must be first invalid in this country.

The attack on the validity of the mark, therefore, merely involves export business. There is no likelihood of the many manufacturers of "Milk of Magnesia" in this country being forced to abandon their products or to settle with the Phillips Company for infringement. If the mark is again upheld by the Supreme Court—if the fight gets that far this time—it will simply mean a status quo condition. If, however, McKesson & Robbins are successful in having the mark declared invalid, all export markets will then become open territory for all manufacturers to use the term "Milk of Magnesia."

Ten Years Ago

(From our pages, July 1919)

The Bayer Co. has sued the Heyden Chemical Works in the United States Circuit Court for $78,136 for breach of contract in failing to deliver salicylic acid according to an agreement entered into about December 12, 1916.

The complaint, which was filed alleges that the Heyden Chemical Works, which were recently acquired by Allen Ryan at a sale by the Alien Property Custodian, agreed to supply The Bayer Co. with salicylic acid, not to exceed 40,000 to 50,000 pounds per month, from February 28, 1917, to a date six months after the conclusion of peace.

The answer of the Heyden Chemical Works has not been filed.

The War Trade Board announces that applications for licenses to export pharmaceutical products and medical accessories to Germany will only be considered, provided the particular commodities to be shipped cannot be procured in Germany. In submitting applications to the War Trade Board, Washington, D. C., covering these shipments, exporters should present such evidence as they may have that the pharmaceutical products or medical accessories which it is desired to export are not procurable in Germany.

Important orders are coming on the market, in the main for export. Refined camphor has advanced, and there is no telling how far the upward movement may go, owing to the absolute control of the situation by the Japanese monopoly. The demand for purely pharmaceutical purposes has of late years become almost a negligible quantity when contrasted with the ever-growing requirements of the celluloid and cinema film industries. The outlook for the Japanese output is therefore favorable for a considerable period.

Dilsizian Bros. have sued the National Aniline and Chemical Co., of New York, in the United States District Court, for $18,090, for breach of contract for failure to accept 100 tons of gum arabic at 21½c per lb. The National Aniline & Chemical Co. stated that the contract was made in June, 1918, and the goods did not arrive until May, 1919, subsequently forcing them to supply their needs from other sources.

The appraisal of the estate of the late Lowell M. Palmer, president of the E. R. Squibb Co., manufacturing druggists, who died in September, 1915, has been filed with Surrogate Wingate in Brooklyn, and shows a net valuation of $2,334,311. Mr. Palmer's children receive the bulk of the estate.

The Denver Chemical Manufacturing Co., 57 Laight st., New York, has awarded a contract for alterations and improvements in its factory to cost about $15,000.

Agricultural Department Goes After Advertising Control

By H. C. Hallam
Washington, D. C.

GOVERNMENT censorship of advertising of drugs, foods and tobacco products is in prospect if Congress were to enact into law a bill introduced by Senator Reed Smoot of Utah, proposing to amend the food and drug act to provide for such censorship. The censorship would be carried on by the Food, Drug and Insecticide Administration, under the supervision of the Secretary of Agriculture.

This result, which has been desired for a long time by officials of the Department of Agriculture, would be obtained under provisions of the Smoot resolution, which define as a form of misbranding, the alleged false or deceptive advertisement, representation, or description of a drug, for example, or of its ingredients or substances contained therein, or of the therapeutic effects of such a product, or its ingredients or substances contained therein.

The question of determining whether there is such false advertising, etc., would rest, by the terms of the Smoot bill and the law which it would amend, with the Secretary of Agriculture, who, in practice, delegates such work to the Food, Drug and Insecticide Administration. The latter would operate under a criminal law, with heavy penalties hanging over the manufacturer and distributor of drug and food and tobacco products, who might be entirely innocent of any alleged false or deceptive advertising of the products he makes or handles.

Smoot Resolution Drafted by Department

The Smoot resolution, it is learned, was drafted with the co-operation of, if not wholly by and in the office of the Solicitor of the Department of Agriculture, representatives of which participated not long ago in a conference with Federal Trade Commission officials on the question of regulating advertising and let it be known that Department of Agriculture officials favored amendment of the food and drug act so as to reach the general advertising of products coming under the act.

High officials of the Department of Agriculture make no bones about giving the Smoot bill, insofar as it relates to the regulation of advertising of food and drug products, their hearty support. For example, Dr. P. B. Dunbar, head of the Food, Drug and Insecticide Administration, under Walter G. Campbell, Director of Regulatory work of the Department of Agriculture, says that if drug and food control is to be effective there must be regulation of advertising of drug and food products, "and I don't care who knows how I feel about it," he added. It may be stated that Dr. Dunbar's attitude is that of subordinate officials engaged in drug and food control work.

The Smoot bill, when introduced, was referred to the Senate Committee on Agriculture and Forestry, which has in turn submitted it to the Secretary of Agriculture for comment and report. Secretary Hyde has passed the measure on to Mr. Campbell, the Food, Drug and Insecticide Administration, and the Solicitor, for advice. A report is being drafted for the Secretary, who will in turn give the benefit of his consideration of the matter to the Senate committee. However, it is stated at the office of Secretary Hyde, that he will not report on the Smoot bill until after the Senate resumes its sessions at the conclusion of the summer recess, which ends in August.

Action Expected at Regular Session

Nobody believes that the Smoot bill will be taken up for consideration in Congress at the special session, but representatives of drug, food and tobacco interests are fearful that it may be pushed for action at the regular session of Congress, which will begin in December. Meanwhile the drug and other interests are organizing to fight the enactment of the Smoot measure, in which fight they are expected to be joined by advertising agencies and publications of all kinds. There is every reason to believe that drug manufacturers, proprietary interests, the pharmaceutical associations, wholesale and retail drug trades will receive plenty of help from the food and tobacco interests in opposing the Smoot bill.

If any such measure is to become law, it is understood that drug trade interests will seek to have their interests safeguarded as far as practicable by further amendment of the food and drug act along lines that are considered vital to protect the interests of the trade. It would be premature to disclose at this time some of the possibilities in this connection.

There seems to be no secret about the fact that sugar and candy interests inspired the Smoot bill, or at least that part of it relating to tobacco, for the former named interests have a long-standing feud on with certain cigarette manufacturers who seek to boost the latter's products at the expense of "sweets." It is reported that a representative of sugar and candy interests came to Washington and got in touch with Senator Smoot's office. A specialist on drafting, gathering data, etc., for the Senator is reported to have been assigned to assist, and conferences with Department of Agriculture officials followed.

Then came the bill, which was introduced with a flourish of trumpets and explained by Senator Smoot in a very carefully prepared speech, as follows:

"The bill which I now lay before this body, designed to protect public health and public welfare from the further exploitation of irresponsible cigarette interests, provides:

"(a) For the inclusion of tobacco and tobacco products within the scope of the food and drugs act.

"(b) For the amendment of the food and drugs act so that claims made for food and drug products in any advertising medium subject to interstate-commerce control should be under the same strict regulation now applied to labels or other descriptive matter on, within, or around the container in which the product is packed.

"Public interest, efficiency, and economy require the amendment to the food and drugs act empowering the Food, Drug, and Insecticide Administration to proceed against any manufacturer of a drug or food product whose public sales claims are partly or wholly unjustified by the facts. The Federal Trade Commission, which now co-operates with the Food, Drug, and Insecticide Administration, has no laboratory facilities and no adequate corps of investigators. Procedure is slow, therefore, and in matters affecting public health vast harm may be done before the Federal Trade Commission is ready or able to take action in the premises.

To Avoid Overlapping Authority

"This measure is proposed, therefore, to remedy this situation and in order to avoid duplication, the overlapping of authority, the diffusion of responsibility, and the dual expense to the Government.

"The bill which I now send to the Clerk's desk is designed to meet a problem of such great and immediate importance to public health and of such vital interest to our agricultural producers and business men that I am confident it deserves and will obtain the support of every Member of Congress."

The language of the bill specially referring to drug advertising is as follows:

Section 8 of the Act of June 30, 1906 (34 Stat. Sec. 5, page 768) is hereby further amended by adding immediately following paragraph third of the section beginning "in case of drugs," the following new paragraph:

Fourth. If, in any manner or by any means whatsoever, it or they or the ingredients or substances contained therein are falsely or deceptively advertised, represented, or described, or if the curative or therapeutic effects of a product or the ingredients or substances contained therein are falsely and fraudulently advertised, represented or described.

There is similar language in the bill referring to food and tobacco products. Section 8 of the food and drug act, referred to in the Smoot bill, defines what constitutes misbranding. Following publication of the bill it began to dawn upon the sugar and candy interests inspiring it that seizure of their products, on the basis of advertising claims, would be possible under the terms of the measure. Seizure of drug products would, of course, likewise be subject to seizure, on a similar basis, in the opinion of drug trade representatives.

According to information received by some of these representatives, Senator Smoot was urged by certain interests to go even further than he did in his bill, namely, to the extent of requiring that if testimonials of drugs or other products coming under the law are paid for, that fact should appear on the face of the testimonials or advertisement thereof. The Senator from Utah, however, did not agree to this proposition. Agricultural Department officials say that it would be very difficult, if not impossible, to enforce a law requiring that paid testimonials be so marked.

Smoot Once in Drug Business

Mr. Smoot who himself personally engaged in the drug business years ago, thinks that tobacco only escapes the food and drug law, as is, by a fine technicality. It seems to be generally conceded that tobacco is not a food; but Mr. Smoot points out that a drug is defined in the food and drug law as "all medicines and preparations recognized in the United States Pharmacopoeia, or National Formulary, for internal and external use." He goes further and says that before the last edition of the Pharmacopoeia, tobacco had been listed as a drug, but was omitted from the last Pharmacopoeia for reasons stated therein. "Although tobacco is thus officially banned as a remedy," says the Senator, "despite the claims of the American Tobacco Co. that it promotes the health of the user, the fact remains that tobacco contains many injurious drugs, including nicotine, pyridin, carbolic acid, ammonia, marsh gas, and other products."

Dr. H. W. Wiley, former chief of the pure food and drug forces of the government, years ago advocated inclusion of tobacco products under the food and drug law.

Drug representatives declare that there is no necessity for regulation of drug advertising under the food and drugs act. Such regulation would be in addition to that now being carried on by the Federal Trade Commission under the law against unfair

(Continued on page 96)

Laboratories of Scott & Bowne, Bloomfield, N. J.

Foreign Business

Told by W. R. Platt

Export Manager, Scott & Bowne, Bloomfield, N. J.

WHILE many in the United States talk glibly of "export business," those manufacturers who have been exploiting foreign markets for any length of time might properly use the term "foreign business" to describe the sale of goods to countries other than our own. The reason for this is simply that manufacturers who have developed business outside of the United States to any great degree, will be found to have manufacturing plants in many countries of the world. So in the strict sense of the word, these companies do not "export" goods from the United States to these countries.

And the manufacturer who is developing foreign markets will sooner or later be forced to consider the establishment of manufacturing plants in foreign countries. This is not only due to the fact that when business in certain countries reaches sufficient volume, local manufacturing is more economical, but it is also because more and more countries are building tariff walls that make local manufacturing imperative if one's business in these countries is to have a real opportunity for expansion.

Laboratories of Scott & Bowne, Inc., of Argentina

In the case of Scott & Bowne, for instance, with a single product, the conduct of their world-wide business has been divided and operated locally for many years, the directing headquarters of the Western Hemisphere being located at Bloomfield, N. J., while that of the Eastern Hemisphere is controlled and directed from the offices of Scott & Bowne, Ltd., London, of England, a separate corpora-

tion. The comments that follow therefore, will apply particularly to the interests of Scott & Bowne of Bloomfield, N. J., in Latin-America and Canada.

In the Western Hemisphere, Scott & Bowne, maintain nine laboratories for the production of Scott's Emulsion. In addition to the Home Laboratories in Bloomfield, they have plants in Argentine, Brazil, Canada, Chile, Cuba, Mexico, Uruquay and Venezuela. They have not established plants in all the countries of Central and South America, and distribution in such countries is made direct from the Home Laboratories in Bloomfield, and in such countries they do conduct an export business.

When it is realized that the business done by Scott & Bowne in this Hemisphere is about equally divided between the United States and the other countries, the value of the foreign business that can be built up for a product of merit can readily be appreciated. The building up and the maintaining of this volume of foreign business is not an easy task and requires much careful effort.

This effort takes them along many paths. It forces them to take an active interest in the things that their customers in these foreign countries call to their attention. When an agent or a customer in the United States writes his American principal about certain difficulties he is having in his terriotry, the manufacturer takes his story seriously, while these tales from foreign lands are not so likely to receive such weighty consideration. It has been Scott & Bowne's policy to try to give just as much consideration to the troubles of their foreign customers as they do to the problems of their customers in the United States.

They try to make every country feel that Scott & Bowne is a part of that country, just as Americans know that their business is a part of the United States. They have created separate countries—incorporated in the United States and registered in the countries in which the plants are located—for each country in which they have a plant. These companies bear the name of the country, as Scott & Bowne, Inc., of Argentine. In this way they have established the idea that Scott's Emulsion is a national product in these several countries.

Quite aside from the effect which the formation of separate countries has upon the many countries, there is the distinct advantage to such a procedure in the matter of accounting. It is their policy to base the prices for Scott's Emulsion in accordance with the conditions of the country in which they are selling. If they can produce and sell the product cheaper in one country than they can in another, they do so. They take the same percentage of profit in all countries—if this is possible—but follow the American idea of the lower the selling price, the greater the consumption. Therefore, when the rate of exchange is favorable to lower production and selling costs in any particular country, they lower their prices. From this point of view, it is obvious that their selling prices in various countries are different. As a matter of fact, they have not the same selling price in any two countries in which they sell Scott's Emulsion.

The necessity of manufacturing locally a single product of seasonal demand—Scott's Emulsion moves more slowly during the summer—removes one obvious advantage that might otherwise accrue to export activities. It removes the possibility of shipping into the Southern Hemisphere during the time when we are having Summer and the Southern Hemisphere is having Winter. Therefore, the possibility of keeping a laboratory in steady production with the goods moving steadily into consumption as they are produced is, to a large extent, removed. They have found that they must adjust their plants to meet a seasonal demand despite heavy demand from foreign markets.

But the advantages that do accrue from foreign business, even when the goods are locally manufactured, are sufficient in themselves without any advantage in the form of straightening a valley in the production curve of the plant in this country to aid them. And in most cases the local manufacturing step is taken only when there are considerable additional advantages from the taking of such a step.

Chemical Salesmen Stage Outing

Members and guests of the Salesmen's Association of the American Chemical Industry, numbering between fifty and sixty, closed the organization's activities until next fall with a combination outing and golf tournament, held at Canoe Brook Country Club, near Summit, N. J., June 27. The crowd was larger than at any previous affair of this nature. The golfers started out early in the morning and most of them played right through the day. About five o'clock a quoits tournament and baseball game were staged. Shortly after, the crowd sat down to dinner. A short business meeting was called to order by Ralph E. Dorland, president of the association, during which the nominating committee was elected. This committee, which consists of Ira Vandewater, B. J. Gogarty, W. F. Tuttle, Grant A. Dorland and William Adkins, will report at the first fall business meeting.

Winners in the golf tournament were then awarded prizes, all having been cash orders on the pro shop. The low gross winners were E. F. Sterk, Grasselli Chemical Co., 83; Edward Orem, E. I. Du Pont De Nemours & Co., 94; Burton T. Bush, 94. Low net winners were B. J. Gogarty, American Solvents & Chemical Co., net 71; William Webb, guest of W. O. Thompson, net 72; Ira Vandewater, R. W. Greeff & Co., net 73. In the kickers handicap, five prizes were awarded, the winning number having been placed in a sealed envelope by Ralph Smith, club professional, and turned over to the committee at the close of the day. In this event Victor E. Williams, Monsanto Chemical Works, proved the best guesser and took first place. Other winners were George Uhe, George Uhe, Inc., Ralph E. Dorland, Dow Chemical Co., Rupert Watson, Oil Paint & Drug Reporter," and William Adkins, Givaudan-Delawanna, Inc.

In baseball, the team captained by Victor Williams took a four to three decision from B. J. Gogarty's boys in a four inning affair. Oscar Lind, Dow Chemical Co. and Grant A. Dorland, Mac Nair-Dorland Co., won the quoits championship by defeating A. L. Benkert, Noil Chemical & Color Co., and Mr. Swenson in the finals. Semi finalists in this competition were Ralph E. Dorland, and Robert Wilson, both of the Dow Chemical Co. and A. P. Lee, Mac Nair-Dorland Co., and Al Hopper, Mallincrodt Chemical Co. W. F. Tuttle, of Chemicals, and Grant A. Dorland, of "Soap" were in charge of the outing.

Detoxification *vs.* Antisepsis

Another "Sham Battle"

By Veader Leonard

THE argument is introduced with the following statement: "Any germicide strong enough to be effective under the conditions existing in the oral cavity will injure the tissues of the mouth if used daily."

This very old notion which has been handed down in text books on dentistry for two generations, without any real inquiry into its accuracy, has been completely discarded in recent years with a better understanding of the problem of oral antisepsis. The problem is no longer considered to be one of finding more and more powerful germicides which do not injure tissue. A considerable variety of germicides are known at the present time which will destroy, in the mouth, every organism *with which they come in contact* and this, in dilutions which are completely harmless to the oral tissues. The difficulty is now recognized to be that of obtaining 100 per cent. contact between the organisms in the mouth and the germicide employed. The writer and his associates have attempted to utilize the physical factor of low surface tension in a germicidal solution in order to increase the efficiency of this contact between the organisms and the germicide. These studies resulted in a product now known as Hexylresorcinol Solution S. T. 37. In certain experiments[1] controlled by bacterial counts, the application of this solution to the gum margin was found to effect what the writer believes to be the nearest approach to complete disinfection of the gum ever attained—reaching the astonishing figure of 99.99465 per cent. Such a result is not due entirely to the bactericidal power of the germicidal solution, but also to its efficiency in making contact with the organisms buried in microscopic angles and crevices, into which solutions of high surface tension fail to penetrate.

The following question has been asked, in the title of a leading article by Donald Merrell in a recent issue of this publication :

"Will Detoxification Replace Germicides in Oral Products?"

The text of the article attempts to build up an argument in support of an affirmative answer. It is the purpose of this article to indicate very briefly, first, the fundamental weakness of the arguments advanced in favor of detoxification and second, that even the question itself should probably not have been asked, since no such inferred rivalry between detoxification and antisepsis as separate and distinct methods of combating oral infestion appears actively to exist.—*The Author.*

Now it will be clear that in attempting to combat oral infection, the first essential is to reach the organism with the agent employed, whether our object is to actually kill it or merely "detoxify" it. Whatever we hope to do to that organism after reaching it with our agent — the difficulties of reaching it remain precisely the same. It would appear on the face of it therefore that efficient detoxification of the oral bacteria presents quite as difficult a problem as that of efficient antisepsis.

Larson and Nelson[2] have shown conclusively that a number of individual soaps, especially those of the unsaturated fatty acids, such as sodium ricinoleate, possess the property of binding certain toxins in some unknown manner and that while so bound, these toxins are deprived of their toxic effects although they retain their antigenic properties. These certain toxins are, notably, diphtheritic toxin, streptococcic toxin, the toxin of the tetanus bacillus and snake venoms. On the other hand, the same workers have shown that *other* toxins such for example as Botulinum toxin, the cause of the most fatal form of food poison-

ing known, not only fail to be bound by sodium ricinoleate, but their toxicity is tremendously *increased* by this treatment. Furthermore Green and Stoessner[3] have shown that the virulence of Amanita phalloides toxin is so enormously *increased* by treatment with sodium ricinoleate that the effect of this activity is apparent in the animal body when the soap is injected as much as seventy-two hours in advance of the toxin!

This is a new subject and relatively little is known about it to-day. To attempt to detoxify a heterogeneous collection of organisms such as those to be found in the mouth, many of which have not even been isolated, described or named, and with no idea at all as to whether the toxins encountered will be increased or decreased in their poisonous properties by the treatment, does not, to say the least, appear to be justified on the basis of our present knowledge.

But passing this by for the moment suppose, for the sake of argument, that *all* of the toxins produced by any and all mouth bacteria were efficiently bound by sodium ricinoleate—just what disease of the mouth would one expect to control by this treatment ?

There are two oral diseases which account for well over 90% of all mouth pathology—namely, dental caries (tooth decay) and pyorrhoea. No one can say that either of these conditions is caused by organisms which produce a toxin. In fact all the experimental evidence points the other way. On the other hand root abscesses which may be caused by streptococci or staphylococci (which do produce toxins) are hardly accessible enough to justify treatment with a mouth wash or tooth paste.

But let us sweep all this aside. Let us suppose, again for the sake of argument, that *all* mouth pathology is due to infection by organisms, *all* of which produce a toxin and that each and every toxin so produced is bound and rendered harmless by sodium ricinoleate. What would be the situation ?

According to Larson, a soap-toxin mixture consisting of 0.4 cc. of toxin and 1 cc. of four per cent. soap solution retains its toxicity. If *one* cc. of water is added, it becomes non-toxic, but if *two* cc. or *three* cc. of water is added, *the toxin is immediately dispersed and regains its full toxicity.*

Even under the ideal hypothetical conditions stated above, it would appear, therefore that when about to detoxify the mouth with sodium ricinoleate, it becomes necessary to know the exact amount of toxin to be detoxified—to add to the tooth brush just the right quantity of sodium ricinoleate or the preparation containing it, to be sure that there is exactly 1 cc. of water present in the mouth for each 0.4 cc. of toxin and finally to not only avoid washing out the mouth after brushing the teeth, for the reason that this dilution would immediately release the toxins again, but also to completely inhibit the flow of saliva for the reason that for each cc. of saliva added to the contents of the mouth, 0.4 cc. of bound toxin would fully regain its toxicity. The procedure seems too complicated for general use.

So much for the toxins, but what of the organisms which produce them ? According to the experimental facts the particular individual organisms which have come in contact with the sodium ricinoleate have not been destroyed, which to a bacteriologist means simply that they have not lost their power of reproduction, but have been robbed of their pathogenicity or ability to produce disease. Under favorable conditions bacteria multiply very rapidly, a new generation appearing in as short a time as each twenty minutes. Within an hour or less then, would it not appear that the second and third generations from these detoxified bacteria might be busily producing toxin, which would, of course, require another detoxification ?

It has been said that the only good Indian is a dead Indian. In the writer's opinion the same applies to pathogenic bacteria.

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[3]Green, R. and Stoessner, A. V. Proc. Soc. Exp. Biol. and Med. 1927, vol. 24, p. 913.

Bourjois Loses Trade Mark Appeal

Application by the Cheatham Chemical Co. for registration of the notation "Polly Peachtree" for toilet water, perfumes and other articles is allowed and opposition by Bourjois, Inc. because of similarity to their marks "Peaches", and "Peach Blow," is dismissed in the opinion of Assistant Commissioner Moore, which follows in part.

"The opposition to the registration of the applicant's mark is based primarily on prior adoption and use by the opposer of trade marks for toilet articles of like character, said trade marks consisting of the word "Peaches," registered February 13, 1917, No. 115,435; and of the term "Peach Blow," registered October 19, 1,886, No. 13,745, and November 11, 1924, No. 191,436.

"The opposition was dismissed by the acting examiner on the ground that the marks of the parties are entirely different from each other in appearance, sound and significance; that "Peaches" is merely the plural of peach; that "Peach Blow" is snyonymous with peach bloom, blossom or flower; whereas, "Polly Peachtree," while fanciful, suggests an individual of that name.

"It is believed that the decision of the acting examiner of interferences is without error and should be sustained."

Work on a method for determining the active principle in pyrethrum flowers has recently been completed by C. B. Cnadinger, chief chemist, McLaughlin Gormley & King Co., who has developed a method described as a rapid and accurate chemical test, disclosing the exact amount of active principle in pyrethrum flowers.

McLaughlin Gormley & King Co., are to publish these "Studies of Pyrethrum Flowers," three of which are completed:

1. The Quantitative Determination of the Active Principles.
2. The Relation Between Maturity and Pyrethrin Content.
3. The Pyrethrin Content of Different Commercial Varieties.

Value of Germicides *in* General *and* Oral *Disinfection*

By W. Eric Drake

Hynson, Westcott & Dunning

While answering Donald Merrell on the value of detoxifying agents in the mouth compared with germicides, Mr. Drake goes further and gives important considerations of germicides under two classifications: General Disinfection, and Oral Disinfection.

MUCH attention has been paid during the past few years to the problems of disinfection, and a vast amount of experimentation has been carried out on the subject. The conclusion has been reached by a number of investigators that it is probably impossible to kill all the organisms present on either a broken or whole epithelial surface in a few seconds or even minutes. Furthermore, not a few authors of repute are of opinion that it is not even necessary to kill all bacteria in practical disinfection, but rather to render the organisms inocuous. In other words, all that need be required of a disinfectant is that it prevent infection by rendering the pathogenic organisms less viable and non-virulent.

General Disinfection

There is, however, more than one aspect to be considered in disinfection. In the first place, there are organisms present on the skin prior to an operative or accidental wound. In the instance of an operative wound, it is possible by the employment of suitable chemical disinfectants to render such organisms ineffective. In the case of an accidental injury, however, some of these organisms may be carried into the wound together with a number of other bacteria present on the material responsible for the injury. It is more difficult to deal with bacteria in a wound than on the skin surface. In the third place, fresh contaminants may subsequently find their way into the wound. In considering the problem of disinfection as applied to the broken skin, each of these factors must be taken into account. It would appear that it is not sufficient merely to inactivate the organisms originally present in the site, but the field should moreover be maintained in a condition which is unfavorable to the development of bacteria subsequently entering the wound.

The presence of pathogenic organisms does not constitute *per se* a condition of bacterial intoxication. The clinical symptoms of an infection are rather produced by the toxins elaborated during the growth of these organisms. It is reasonable to suppose, therefore, that if the organisms are so treated and the conditions in the field so maintained that development is arrested indefinitely, no harm can arise as the result of the presence of pathogenic microörganisms. It may, therefore, be inferred that the problem of disinfection resolves itself into one of permanent inhibition of the growth of the infective organisms.

At present, there are few germicidal substances which will kill invading bacteria in a wound or on mucous membranes without destroying some of the more delicate body cells. Most substances used for such a purpose, while being actively germicidal, are at the same time widely destructive of such cells. It has frequently been pointed out that if the application of a disinfectant to a wound or mucous membrane leads to a further destruction of tissue, it becomes doubtful whether the mere killing of bacteria is not outweighed by the destruction of tissue. A slight corrosive effect may not in itself be dangerous, but should be avoided since it renders the area more liable to subsequent infections. Recently a few physicians have recommended that no germicide should be used in first aid work, since a large number of germicides do destroy tissue. They suggest that the wound should be cleansed with warm sterile physiological salt solution and should receive no further treatment. The majority of medical practicioners, however, prefer to take the additional precaution of using a mild chemical disinfectant. When contamination by an organism, such as B. tetani, is suspected complete reliance cannot be placed upon any germicide. The appropriate prophylactic measures should, of course, be taken. To summarize the remarks up to this point, it has been indicated that complete and rapid sterilization of broken or unbroken epithelial tissues is probably impossible; that most of the more powerful and caustic disinfectants destroy tissue; that the mere

presence of pathogenic organisms may be considered unimportant if their development is prevented; and that in view of the probability of secondary invasions, it is desirable to use some substance which will render the site of injury indefinitely unfavorable to growth of bacteria.

Antiseptic Dyes

Considerable attention has recently been paid to the use of certain antiseptic dyes. These substances are absorbed or in some way held in the tissues and because of their marked bacteriostatic properties render the area unfavorable to the development of bacteria. The argument has been adduced that because of this property, they are much more valuable as disinfectants than substances which can easily be removed from the tissues by washing or by serum exudates. In addition to this, surgeons have employed these substances because of the clear definition of the field which has been treated. If a colorless antiseptic is applied to the skin, it is very difficult to determine how much of the surface has been treated after the solution has dried out. In the case of tincture of iodine, there is a fairly rapid disappearance of the brown color of the solution, due probably to the volatisation of the iodine. The best results in disinfection of the unbroken skin have been obtained by using the antiseptic substance in a lipoid soluble solution. Antiseptic dyes have also been used successfully in the treatment of mucous membranes. It is probable that the value of these antiseptics is in part due to the fact that they are held in the field by some physico-chemical means, and that there is a sufficient amount of material constantly being liberated to render the adjacent fluids bacteriostatic. The presence of free antiseptic may readily be demonstrated by lavage of the treated tissues. As an example of the prolonged action of antiseptic dyes, Mayes (1926) has stated that there is no development of organisms found in the vagina from twenty-four to forty-eight hours after treatment with mercurochrome. In the same way if a small amount of such an antiseptic substance be taken into the mouth at night and then expectorated, it is found that the sputum is distinctly colored the following morning. The dye is present in sufficient concentration to inhibit the growth of microörganisms in the sputum. Young, Scott and Hill (1924) reported that if a small dose of mercurochrome is ingested, the urine becomes bacteriostatic and the flora of the faeces is reduced. Other investigators also have demonstrated that the number of organisms in the faeces is greatly reduced following oral administration of mercurochrome (Williams 1925). Hench, Snell and Greene (1925) reported on the bactericidal action of bile following a dose of five hundred milligrams of mercurochrome by mouth. It is improbable that the dye was present in sufficient quantity to be rapidly bactericidal in any of these cases, but there is no question that the amount present is capable of acting bacteriostatically. The maintenance of a prolonged condition of bacteriostasis is of greater importance than a brief bactericidal action. It would, therefore, seem that at present the antiseptic dyes provide the most promising substances for use in clinical disinfection.

Oral Disinfection

It has been demonstrated by Larson (1921 and 1926) that solutions of sodium ricinoleate are capable of rendering bacterial cultures non-pathogenic when this substance is added to the culture in the test-tube, and, moreover, that the inactivated culture, when subsequently injected into patients is capable of producing a condition of immunity. Cultures and toxins inactivated in this way have been used as antigens. It has further recently been suggested that if the theory of Besredka (1927) regarding local immunization is correct, sodium ricinoleate might be applied in the treatment of bacterial infections in the mouth. The idea is that the sodium ricinoleate solution would promote a condition of local immunity by "detoxifying" the bacteria. It is apparent from Besredka's work, however, that in order to produce such immunity, the membranes must, as a rule, be made more than usually permeable to the immunity-giving bodies. It would further seem that while cultures in the test-tube may be detoxified, and thereby produce an immunity-giving body, it does not by any means follow that a similar condition would be induced in the oral cavity. The mere fact that a caustic germicide will not always kill all the pathogens on any given surface is a clear indication that some organisms must escape its action. In the mouth too, there is constant recontamination and there would appear to be no question that the amount of ricinoleate which is retained after some time would be insufficient to render the invading organisms inocuous. In other words, if only a few organisms are inactivated at first, there is no reason to believe that this number is sufficient to produce a marked local immunization. It would, therefore, appear to be much more desirable to employ a substance which will prevent the development of bacteria for many hours rather than to use one which merely inactivates a small number of bacteria, and does not effect the larger number of invading organisms. In addition to this, it is found that if an increasing amount of culture be added to a given quantity of disinfectant, a point is reached where all the bacteria are no longer killed. It is, therefore, obvious that the activity of the solution is progressively lost as the number of organisms increases. If this principle is applied to the action of sodium ricinoleate, it is clear that only a certain number of bacteria can be inactivated by a given amount of the substance. When the number of bacteria exceeds this value, the sodium ricinoleate can no longer be effective.

Let us consider the probable conditions when a substance such as sodium ricinoleate is used in the mouth. There is normally present in the oral cavity

a very large number of bacteria which varies with the individual. Conditions in the mouth are such that it is an excellent place of incubation for many diverse forms. Bacteria are, moreover, constantly finding their way into the oral cavity from the respiratory passages. Practically all food contains a large number of organisms, some of which remain in the mouth and multiply. Large numbers are constantly being flushed down the alimentary canal by the excretion of saliva. There is then a continuous condition of invasion, development and flushing out of bacteria. Some of these organisms, however, become lodged in the interstices between the teeth and in the irregularities of the mucous membranes and are, therefore, less susceptible of removal. We are concerned chiefly with the pathogens. If now a solution of sodium ricinoleate be taken into the mouth and either agitated mechanically with a toothbrush or with the tongue, a large number of the organisms present will come into contact with the solution. These organisms will probably be inactivated. When the liquid is expectorated, however, by far the greater number of such inactivated organisms is removed from the mouth and is, therefore, incapable of exerting the acquired immunity-giving properties. The number of organisms in the mouth is now greatly reduced. Some of these have come into contact with the ricinoleate solution, while others undoubtedly have not. There is also, however, a slight concentration of ricinoleate present, which is progressively being diluted by saliva. In view of this process of dilution, it is very doubtful if the concentration of sodium ricinoleate is sufficient, even after a few seconds, to be effective in inactivating the organisms, particularly in view of the fact that more organisms are constantly being poured into the oral cavity. It would appear from such considerations that the detoxified bacteria and toxins which might be expected to produce a local immunity, have been for the most part flushed out of the mouth when the solution was expectorated, and that it is highly improbable that any marked degree of local immunication can be induced by the comparatively small number of inactivated organisms remaining.

When dealing with an average twenty-four hour bacterial culture in broth, there is present a number of bacteria of the order of five hundred million per ccm. If an inactivated culture of this type is used as an immunizing agent, the number of organisms used is far in excess of the number of any particular species present in the mouth at any given time. A very considerable number of inactivated bacteria must however be present in order that any marked degree of local immunization may be obtained. It seems, therefore, that little effect is to be obtained by the use of an inactivating agent, such as sodium ricinoleate in the mouth. It is very doubtful if any specific organism can be controlled by such a method.

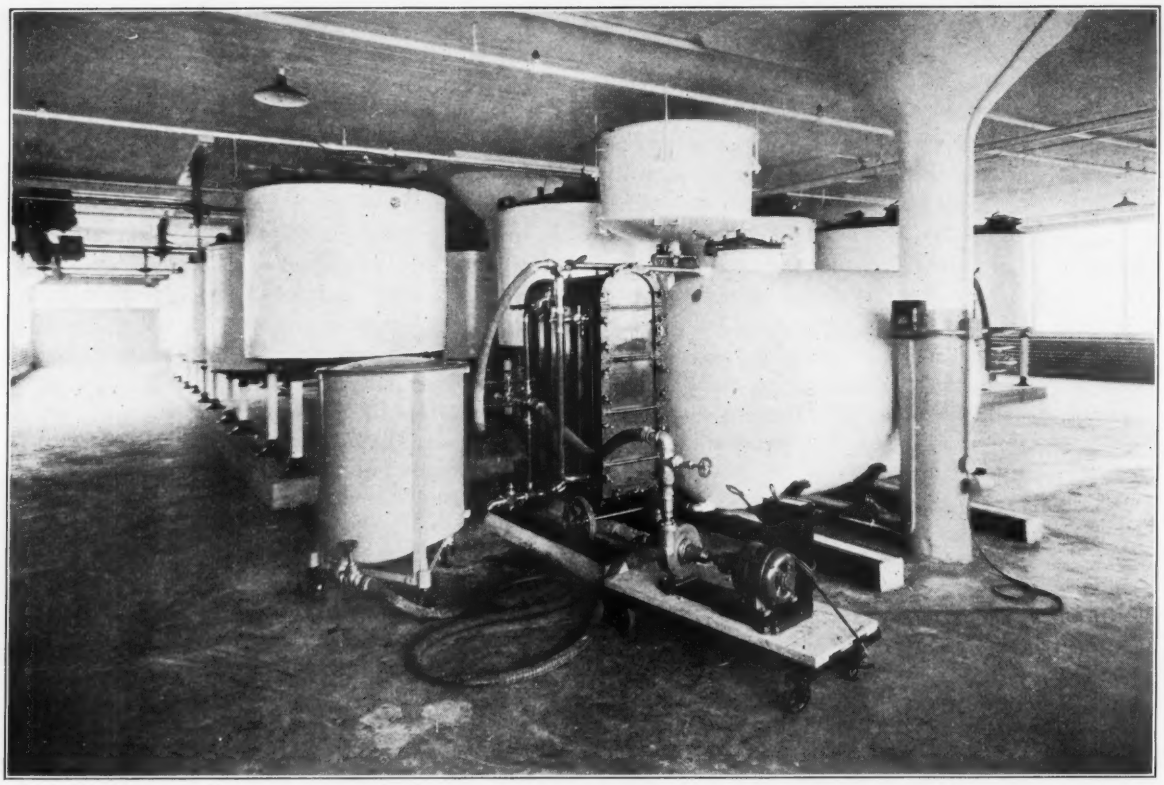
The only other procedure which is at present generally available is disinfection. For this purpose, a large number of chemical disinfectants have been employed; many of them are somewhat astringent, and are only mildly disinfectant. In this group may be included such substances as sodium perborate and dilute solutions of phenol and alcohol. At the moment of application, these substances are no doubt bactericidal, but they rapidly undergo such dilution as renders them inactive. Furthermore, these substances have no marked bacteriostatic action. It is desirable to use for this purpose some agent which has very marked bacteriostatic properties. At the same time, however, we cannot use a solution which is highly irritant or caustic. In this connection again the antiseptic dyes are at once suggested.

Several of these compounds are very definitely bactericidal and at the same time possess bacteriostatic properties in great dilution. The only objection which might be raised to their use in the mouth is that they stain, but this is a slight consideration and is completely outweighed if the desired results are obtained. It is also satisfactory to be able to demonstrate the presence of the antiseptic by the coloration. Some of these substances have been shown to be practically non-toxic to the host, while being extremely toxic to the invaders. The addition of very small quantities to nutrient media will completely inhibit growth of the organisms. If, therefore, a reasonably concentrated solution is used in the mouth, there would still be sufficient material present after a considerable time to maintain a condition of bacteriostasis. One reason for this, as has previously been pointed out, is that the dyes seem to be held in some way in the tissues and are liberated gradually. Another valuable property of these substances is that they almost completely lack any irritating quality and do not at all retard the production of new tissue.

There are a number of antiseptic dyes on the market; the most widely used and successful of which is mercurochrome.

It would appear from the points which have been suggested in this article that the antiseptic dyes at present are the most satisfactory substances for use in the treatment of any infected area. There seems to be a much greater element of safety and probability of success when a highly bacteriostatic dye substance is used in preference to an agent which kills bacteria at the moment of application, but is valueless after a very short time. In the same way such substances are to be advocated rather than those which involve a widespread destruction of tissue or which merely detoxify bacteria under special conditions.

(Continued on page 96)



Laboratory, showing mixing tanks, ageing tanks, and in the foreground the distillation apparatus.

Bottling Department, Note linoleum flooring to insure easy cleaning and protect workers against contact with cement flooring.

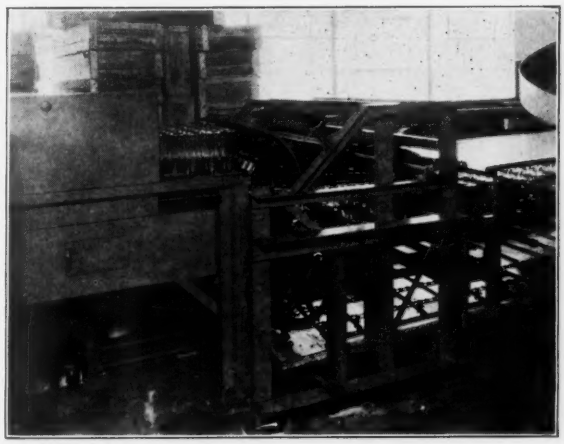
MASS PRODUCTION *of an* ANTISEPTIC

The new Eastern plant for production of Listerine includes the latest developments to insure cleanliness, speed and elimination of waste.

THE Lambert Pharmacal Company's new plant in Jersey City for the production of Listerine is now in operation. How approximately 2,500,000 bottles of Listerine are produced monthly with the minimum of labor and the maximum of efficiency in plant control is of great interest to the manufacturer whose problem is mass production. This problem has been solved in the new Lambert plant by a splendid arrangement in which gravity, the cheapest of motive power, is used wherever possible to convey both finished product and containers to specially constructed high speed machines.

With this idea of gravity in mind the laboratory, as illustrated in figure 1, was placed on the sixth floor of the building. Here the mixing is done in 24 glass lined tanks, enameled on the outside in spotless white. There are also five storage tanks in which the Listerine is permitted to age, and in the foreground of the illustration can be seen the filtration system where the product is given two to three filtrations. Two denatured alcohol tanks also occupy this floor, into which the alcohol is pumped and kept under pressure to be drawn off as needed. These tanks are supplied from the two main storage tanks in the basement of the building with a capacity of approximately 8,000 gallons each, and which in turn are filled by gravity from shipments received on railroad siding. One of the features of the laboratory is the piping connecting the various tanks and filters and running down to the filling room two floors below. This is so constructed that it can be taken apart and cleaned without disturbing the general operation. The entire operation of the room is under push button control.

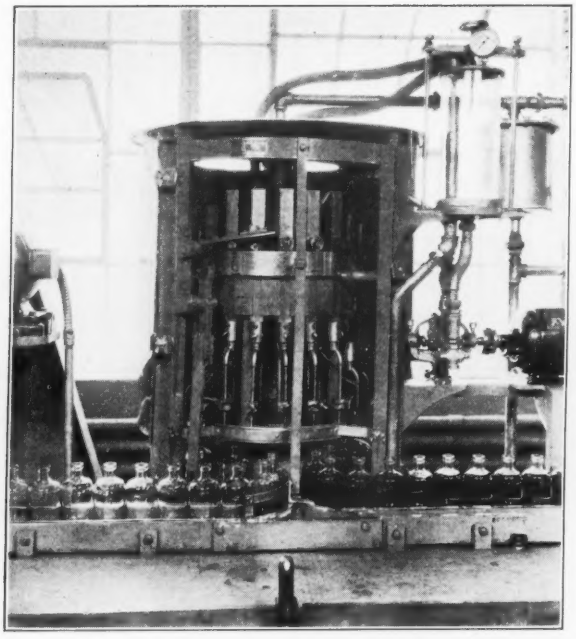
The fifth floor of the building has been given over to storage. Here the corrugated boxes are made up and sent down to the floor below on a chute arriving at the wrapping machines where the wrapped bottles of Listerine can be filled into them and again sent down on a chute to the third floor or storage room for finished material. This saves both time and labor and prevents cluttering up of the aisles in the bottling department.



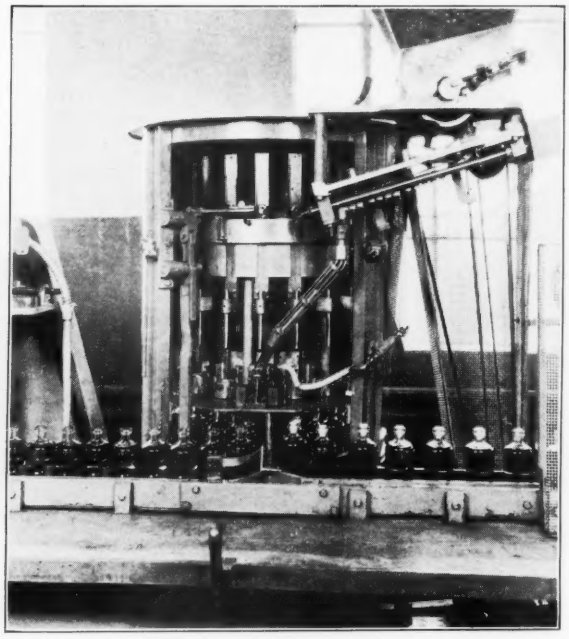
Washing machine, showing bottles being automatically set on conveyor where their journey begins.

The bottling department occupies the fourth floor of the building and a model layout has been arranged as illustrated in figure 2. This room is arranged in such a way that production can be increased to 5,000,000 bottles per month, or practically double present capacity, with very little change in general layout. The bottles start their journey at the east end of this room which has a storage capacity of six carloads of empties. They are placed by hand in the automatic washing machine, illustrated in figure 3, where they are given a thorough and scientific washing. Illustration 3 shows the bottles emerging from the washing machine and being tossed upright on to a conveyor which carries them to the filling machine. On this journey they are dried by heat so that by the time they reach the filling machine every last particle of moisture has been eradicated.

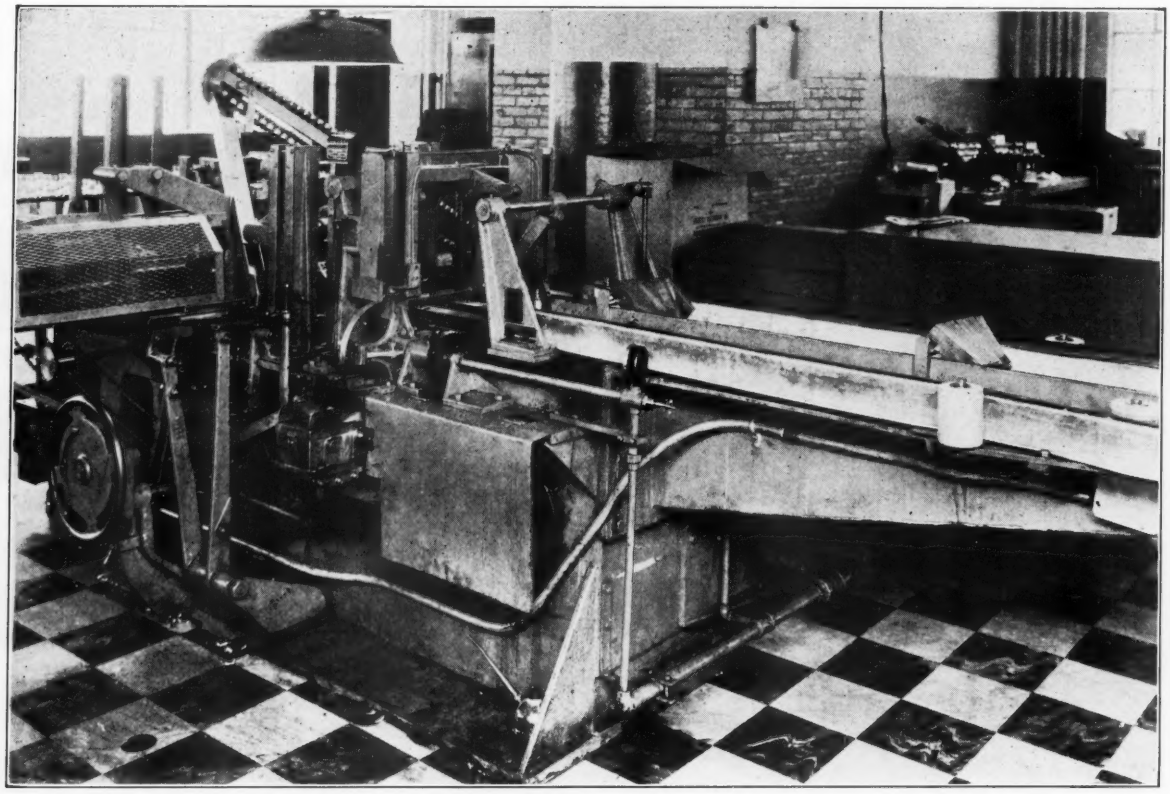
The filling machines are fully automatic in operation. They are of the rotary, volumetric type, measuring the exact volume required for the size of bottle to be filled to a great nicety. The bottles enter the machine, come under the filling-head and then leave the machine to be corked immediately. A different



Rotary filling machine. Bottles enter, are filled, and pass directly to the corking machine.



Rotary corking machine, where tapered corks are inserted.



Wrapping machine which performs approximately 26 separate operations.

machine is used for each size of bottle but all are of the same type. So short is the space of time between filling and corking that absolute cleanliness is maintained, in fact the air hardly touches the contents of the bottles at any time during the entire process.

The corking machines are also of the rotary type, the bottles being conveyed directly from the filling machines. These machines insert a tapered cork in each bottle, after which it passes out and under a revolving vertical wheel which forces in the cork. A great deal of nicety was required in the production of this machine as the bottles and corks must fit each other "like a kid glove."

After passing through the corking machine the bottle journeys on a conveyor to long storage tables. These tables are well illustrated in figure 2. From this point the bottle passes through the labelling machine which very ingeniously whirls the bottle about and automatically stops it with the raised lettering on the bottle itself facing in such a position that the front and back labels, which are automatically pasted on, are in exactly the same place on each and every bottle, namely, just a measured distance below the raised lettering. This machine shows almost human intelligence in lining up the bottles in this way.

At this point the bottles are removed by hand and fed into the ajacent wrapping machine. While this operation could also have been performed automatically, it was thought advisable to have an inspection at this point as the bottles have moved forward from the washing machine without having been touched by human hands.

The wrapping machine itself, illustrated in figure 6, is of such an ingenious nature that the illustration cannot possibly do it justice, nor can words adequately describe its performance. Approximately 26 separate and distinct operations are here performed in producing the well wrapped Listerine package with which everyone is familiar. This machine inserts the little wire corp-puller, places an advertisement around the bottle, lays it into a sheet of stout wrapping paper, triple folds the ends, seals it with sealing wax, places and fastens a corrugated paper disc at top and bottom of the bottle to protect it against breakage in handling, and with almost unbelievable rapidity the bottle again passes to the conveyors, more neatly and compactly wrapped than anyone could possibly do it by hand, and about a hundred times faster.

At this stage of the operation the package is again picked up by hand and another circular placed around the bottle and fastened by an elastic. Here also are the terminals of the overhead chutes which send down the corrugated paper packing cases from the floor above. The cases are here filled and a little push sends them again on their way down another chute to the finished goods storage room on the floor below, where production records are also kept. From here they move again by chute to the shipping room on the ground floor where trucks and freight cars await them to carry them on to their final destination.

One of the outstanding features of the entire plant is its absolute cleanliness, which guarantees the purity of this antiseptic product. The color scheme is gray and white; floors in the bottling department are laid with linoleum to make cleaning easy and also to protect the workers against having to stand all day on concrete flooring; piping is so constructed that sections can be removed for cleaning without disturbing general operations; and the packing boxes are made up on a separate floor and sent to the machines for filling, thereby preventing the cluttering up of the aisles and a general unsightly appearance.

The automatic machinery is the last word in high speed perfection, also guaranteeing against contact of the product by human hands and so producing a product as uniform in quality, and as scientifically packaged as human ingenuity can make it.

Equipment Used

Glass lined storage and mixing tanks—Pfaudler Co.

Bottle washing, filling, and corking machines—U. S. Bottling Machinery Co.

Labeling—McDonald Engineering Co.

Wrapping—Redington Machine Co.

Bottle Companies Win Patent Suit

Owens Bottle Co. and three other enterprises directly connected with the glass industry of Toledo were exonerated from claims for many millions of dollars filed against them. The decision was handed down in the Toledo Federal Court June 17, by Judge George R. Hahn.

The suit had been brought against these companies in 1926 by the European Association of Glass Bottle Manufacturers, Ltd. and arose out of a contract made in 1907. Europaischer Verband der Fashen Fabriken claimed the right to use the Graham automatic bottle blowing machines; improvements to Ownes Automatic bottle machines, as well as Libbey Owens sheet glass drawing machines, in Europe and South America. No claim was made for the American rights but was confined to foreign rights. The German claim has now been denied and the American companies, by the decision, are free to continue exploitation of their foreign business.

To Produce Domestic Papain

Papaya Products, Inc., has recently been incorporated in Delaware to produce papain in Southern Florida. The company has a new process for the production of papain from the paw paw grown in Florida. Patents have been applied for on the process. A representative of the company states that the papain as produced by the company is much more desirable than the imported product, being 98% papain, and almost white in color.

Ground will be broken Nov. 1, for a new plant to bring about commercial production.

A new high speed analytical balance, manufactured by Sartorius-Werke A. G. of Goettingen, Germany, has been introduced into the United States. The new balance is termed the Industrial Rapid Balance and is being handled exclusively by Pfaltz & Bauer, Inc. It is said to be five times as fast as the ordinary balance because of the complete mechanical handling of the weights. An experienced operator on the new type balance can make a complete and accurate weighing and reading (automatically recorded) in a half-minute.

A. D. M. A. Committees Named

Chairman, Board of Control, and Subcommittees of Scientific Section for the Ensuing Association Year.

Chairman: Paul S. Pittenger.

Board of Control: Pittenger, Murray, Hopkins, Leonhardt, Taylor, Whidden.

1. (a) *Alkaloid and Drug Standards:* Bye, Austin, Grantham, Heyl, McMeans, Nitardy, Rhodehamel, Taylor.

(b) *Analytical Assay Methods:* Fiske, Blome, Heyl, Hoskins, Snyder, Vanderkleed, Slothower.

2. *Chemical Tests and Standards:* Berg, Rosin, Parker, Schaefer, Kober, Stull, Barol.

3. *Control Assays:* Snyder, Fenger, Hynard, J. A. Patch, Rhodehamel, Rosin, Taylor, Ewe.

4. *Crude and Milled Drugs:* Crosbie, Fiske, Hopkins, Taylor, Beach.

5. *Digestive Ferments and Glandular Products:* Klein, Blome, Bye, Dunning, Fairchild, Fenger, Graber, Heyl, Rhodehamel, Taylor, Kober, Findlay.

6. *Drug Extracts:* Taylor, Austin, Berg, Bibbins, Bye, Flint, Snyder, Barol.

7. *Pharmaceutical Investigations:* Heyl, Hoskins, Remensnyder, Snider, Ewe, Vanderkleed, Barol.

8. *Pharmacological Assays:* Graber, Fenger, Hamilton, Heyl, Klein, Neilson, Githens, Munch, Blome.

9. *Synthetic Organic Chemicals:* Volwiler, Bebie, Fisk, Pasternack, Putnam, Read, Remensnyder, Rhodehamel, Stull, Taylor, Berg, Murray.

10. *Vitamin Assay of Cod Liver Oil:* Holmes, Emmett, Holaday, Rhodehamel, Jones.

Section Chairman and Committee Appointments

Biological Section—S. D. Beard, Chairman, Lederle Antitoxin Laboratories.

Crude Drug Section—F. A. Cornelius, Chairman, S. B. Penick & Co.

Medicinal Chemical Section—George Merck, Jr., Chairman, Merck & Co.

Pharmaceutical Section—Thurston Merrell, Chairman, The Wm. S. Merrell Co.

Scientific Section—Paul S. Pittenger, Chairman, Sharp & Dohme, Inc.

Councillor to M. S. Chamber of Commerce—Nicholas H. Noyes, Eli Lilly & Co.

Actinic Values of Glass—Dr. John C. Krantz, Jr., Chairman, Sharp & Dohme, Inc., Dr. Wilbur L. Scoville, Parke, Davis & Co., Dr. W. H. Blome, Frederick Stearns & Co.

Education—Charles G. Merrell, Chairman, The Wm. S. Merrell Co., Dr. H. Sheridan Baketel, Reed & Carnrick, H. H. Whyte, H. K. Mulford Co. S. DeWitt Clough, Abbott Laboratories, Dr. H. A. B. Dunning, Hynson, Westcott & Dunning, B. Tappen Fairchild, Fairchild Brothers & Foster, L. H. Ashe, E. R. Squibb & Sons.

Employment Problems—E. H. Ravenscroft, Chairman, Abbott Laboratories, J. G. Searle, G. D. Searle & Co., James A. Patch, The E. L. Patch Co., Frank L. H. Nason, Tailby-Nason Co., E. F. Wagner, Sharp & Dohme, Harry Noonan, Drug Products Co., W. R. Phemister, Monsanto Chemical Works.

Entertainment—Frank J. McDonough, Chairman, New York Quinine & Chemical Works.

Foreign Trade—Kerro Knox, Chairman, H. K. Mulford Co., Dr. L. N. Upjohn, Upjohn Co., Albert de Castro, Parke, Davis & Co., A. D. Guerra, Sharp & Dohme, Dr. N. S. Mayo, Abbott Laboratories, R. W. Showalter, Eli Lilly & Co., Edgar M. Queeny, Monsanto Chemical Works, F. De La Garza, Fritzsche Brothers, Inc.

Hydrogen-Ion Concentration—Dr. Mortimer Bye, Chairman, The Wm. S. Merrell Co., Dr. J. P. Snyder, Norwich Pharmacal Co., Dr. F. O. Taylor, Parke, Davis & Co., Dr. John C. Krantz, Jr., Sharp & Dohme, Dr. Charles E. Vanderkleed, Robert McNeil, Dr. Walter C. Christiansen, E. R. Squibb & Sons, Dr. E. H. Volwiler, Abbott Laboratories, Dr. F. W. Heyl, Upjohn Co., Dr. W. H. Blome, Frederick Stearns & Co., Dr. H. S. Adams, Upjohn Co.

Insurance Problems—C. C. Doll, Chairman, Zemmer Co., N. L. Scofield, E. R. Squibb & Sons, Thurston Merrell, The Wm. S. Merrell Co., W. Gordon Cox, Tilden Co., F. W. Keyser, Nelson, Baker & Co., George R. Flint, Flint, Eaton & Co.

Legislation—Horace W. Bigelow, Chairman, Parke, Davis & Co., John G. Searle, G. D. Searle & Co., A. Homer Smith, Sharp & Dohme, M. C. Eaton, Norwich Pharmacal Co., Nicholas H. Noyes, Eli Lilly & Co., Thurston Merrell, The Wm. S. Merrell Co., Josiah C. Peacock, H. K. Mulford Co., R. Lincoln McNeil, Robert McNeil, R. C. Ringgold, Sharp & Dohme, E. A. Reed, Upjohn Co.

Membership—J. J. Powers, Chairman, Chas. Pfizer & Co., Inc., Dr. A. S. Burdick, Abbott Laboratories, Dr. H. C. Lovis, Seabury & Johnson, Ralph R. Patch, The E. L. Patch Co., A. C. Henderson, Armour & Co., W. H. Ohliger, Frederick Stearns & Co., Dr. S. R. Light, Upjohn Co.

Memorials to Deceased Members—Dr. George Simon, Chairman, Heyden Chemical Corp., J. J. Powers, Chas. Pfizer & Co., James T. Pardee, Dow Chemical Co.

National Drug Trade Conference Delegates—Horace W. Bigelow, Parke, Davis & Co., A. Homer Smith, Sharp & Dohme, Carson P. Frailey.

Alternates—Josiah C. Peacock, H. K. Mulford Co., Dr. H. A. B. Dunning, Hynson, Westcott & Dunning.

Patents and Trade Marks—Dr. S. R. Light, Chairman, Upjohn Co., Hilton F. Snider, R. J. Strasenburgh Co., Ralph R. Patch, The E. L. Patch Co., C. N. Angst, Pitman-Moore Co., A. W. Bays, Abbott Laboratories, John W. Davies, Davies, Rose & Co., Dr. H. A. B. Dunning, Hynson, Westcott & Dunning.

Pharmaceutical Contact—Dr. J. P. Snyder, Chairman, Norwich Pharmacal Co., Dr. F. O. Taylor, Parke, Davis & Co., Dr. F. W. Heyl, Upjohn Co., A. H. Fiske, Eli Lilly & Co., A. Homer Smith, Sharp & Dohme, Edgar B. Carter, Swan-Myers Co., Dr. A. S. Burdick, Abbott Laboratories, Carson P. Frailey, Mortimer Bye, The Wm. S. Merrell Co., Alfred Barol, H. K. Mulford Co.

Sales and Advertising Problems—S. DeWitt Clough, Chairman, Abbott Laboratories, Josiah K. Lilly, Jr., Vice-Chairman, Eli Lilly & Co., Turner F. Currens, Norwich Pharacal Co., R. D. Keim, E. R. Squibb & Sons, Dr. F. B. Kirby, Abbott Laboratories, M. Galbraith, Upjohn Co., George L. Genz, Parke, Davis & Co., O. J. Neiderhofer, The Wm. S. Merrell Co., R. M. Cain, Swan-Myers Co., Donald Merrell, The Wm. S. Merrell Co., A. M. Hayes, Hynson, Westcott & Dunning, Fred A. Lawson, The E. L. Patch Co., Walter Lee Rosenberger, Robert McNeil.

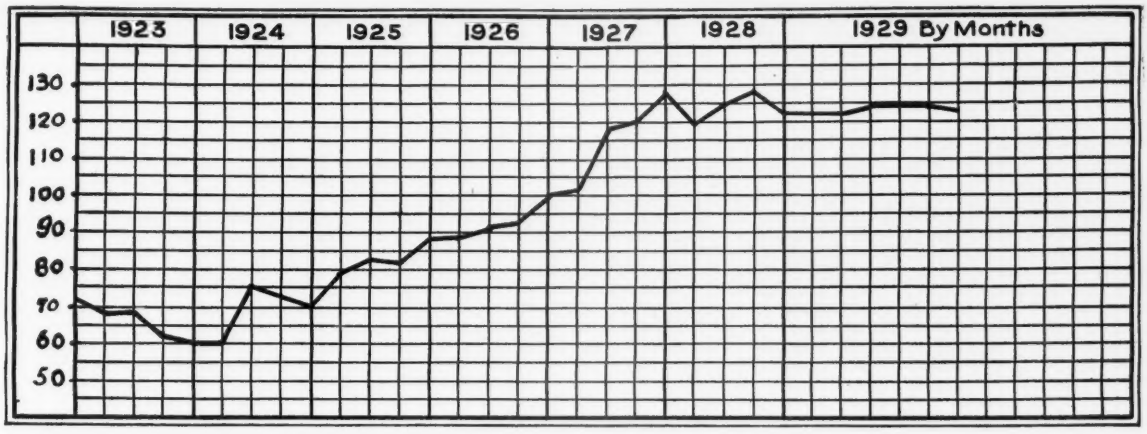
Transportation—Walter G Norvell, Chairman, Parke, Davis & Co., William J. Buchanan, Frederick Stearns & Co., J. W. Korn, Eli Lilly and Co., B. F. Williams, Norwich Pharmacal Co., Thomas O'Donnell, Mallinckrodt Chemical Works, E. A. Reed, Upjohn Co., R. S. Westgate, E. R. Squibb & Sons.

Uniform Cost Accounting—Nicholas H. Noyes, Chairman, Eli Lilly & Co., Carl F. Eveleigh, Associate Chairman, Eli Lilly & Co., A. T. Rickards, H. K. Mulford Co., J. F. Stiles, Abbott Laboratories, J. H. Foy, Maltbie Chemical Co., Thurston Merrell, The Wm. S. Merrell Co., Earl Warner, Frederick Stearns & Co., C. G. Chandler, Upjohn Co., R. S. Hotchkiss, Parke, Davis & Co., J. K. Hill, Norwich Pharmacal Co.

Chicago Drug Trade

Chicago, with 1,899 retail drug stores, selling $70,000,000. worth of merchandise yearly, of which $57,000,000 in 1927 was for drugs alone, is rapidly taking first place in the retail drug field of the United States, according to a survey just made by the Association of Commerce.

The survey shows that every man, woman and child in Chicago buys $23 worth of merchandise in drug stores every year, with each merchant retailing to an average of 1,691 people.



Prices of Mercury: Dollars per Flask

Will Mercury Advance *on a* Statistically Weak Market?

The largest stock of mercury ever in existence is held by the Monopoly. Yet the English appear about to give up their fight for control with the result that the Monopoly will be in complete control of the world market. A price of $145 is forecast; will it be realized?

ALTHOUGH the market for mercury might be considered statistically weak due to the fact that the largest known stock that ever existed is now in the hands of the main factor, there is no real reason to anticipate lower prices in the near future. In fact there is more reason to believe that prices might advance sharply within the next few months—but whatever will happen cannot accurately be forecast at this time. All that can be done is to present the case and let the observer closely watch future developments in the hope that he can act advantageously to himself as the signs are revealed.

In the first place the consumption of mercury in this country is increasing. And this increase is not due to any great increase in mercury salts for medicinal use. The largest user of mercury in times past was the explosive industry, followed closely by the pharmaceutical industry. But the steadily increasing use of mercury arc rectifyers in electrical transmission indicates at this time that the use of mercury in these machines will soon lead the field of mercury consumers. Also the use of mercury salts for seed germination is taking increased amounts of the metal, and the main use of mercurial salts will soon be—if it is not already—agricultural rather than medicinal.

The increased consumption of mercury could easily have been taken care of by the foreign producers who have always controlled the market. But unfortunately for the consumer at the moment—and probably fortunately for them over a long period—foreign prices were advanced to the present levels and domestic production greatly stimulated thereby. It is not to be assumed that the advance in the foreign prices of mercury was altogether a desire to obtain more money for mercury. In fact the producers themselves were not entirely responsible for the advance. They welcomed it when it came, but they did not know the strategy that lay behind it. The fact of the matter is that the London speculators who have always controlled the mercury market—and who are now fighting against losing this control—purposely pushed the price of mercury to a point at which American production would be stimulated with a hope that they could use the American production as a threat against Europe if Europe ever wanted to take control away from London. American production is now greater than imports and is now being held over the heads of European producers who are insisting on controlling the situation themselves.

The English knew that they always could ruin the American industry to a very large extent at any time

by merely dropping the price below $100 per flask. It is stated that of the forty or so American producers, all but about five or six could not exist if the price fell below $100 per flask.

However, the monopoly formed by the Italian and Spanish producers—backed by their respective governments—appears determined to control the mercury situation. Since the formation of this monopoly a little less than a year ago, the monopoly has sold only 3,800 flasks of mercury. Production has been maintained at an increased rate and approximately 104,000 flasks of mercury have been stocked at the mines. This is the largest stock of the metal that has ever existed. In the meantime the consumers have been supplied by the English speculators who have consistently quoted below the monopoly—in the hope that the monopoly will again sell its supplies to the English after it found that it could not sell the consumers.

As the situation lines up at the present time, it appears that the monopoly is determined to take over the mercury market itself. Well informed circles venture the opinion that within a fortnight the English sellers will be completely out of stock, and then the monopoly will dominate the market.

Liquidation of Stocks Not Possible

As to the possibility of the monopoly attempting to liquidate its stock of mercury, the possibility appears very remote. At the time that the stocks at the mines were half of what they are to-day there was a possibility of such a break. But to-day the stocks have grown to such huge proportions that an attempt to liquidate would completely wreck the market.

It must be remembered that the total consumption in this country is only about 35,000 flasks including about 17,000 flasks of domestic metal. This gives some idea of how huge the holdings of the monopoly are. Another way of considering the size of the monopoly's stock is to realize that its mines in Italy and Spain are producing at a rate to supply the entire world and they have sold practically no metal in almost a year. At the present market price this quantity of metal is worth more than $11,000,000.

In the event that the monopoly does regain control of the situation, consumers can expect higher prices, according to the opinions of leading sellers in this country. It has been stated that the monopoly is planning to name a price of £25, which would mean a market of approximately $145,000 per flask duty paid in this country. In just what way this would help the monopoly out of its heavily stocked position cannot be seen as such a market level would stimulate production in this country still further. The year's production of the Spanish mine is now completed, however, and the Italian mines are reported to have curtailed production. The producing season of the Spanish mine runs from late September to May, so production at the Almaden mine of Spain—the largest mine in the world—will not be resumed until next Fall. This gives the monopoly a little breathing spell in the way of increasing its holdings.

While under ordinary business conditions, a holder of such large stocks would be pressed for at least partial liquidation by the financial interests, in this case the financial interests are said to be the Italian and Spanish governments with practically unlimited resources. Therefore, there is but little probability of any forced liquidation of these enormous holdings.

Position Very Uncertain

The fact that the market is statistically weak, yet strongly held, puts the buyer in a very uncertain position. There seems to be no doubt at the moment that the monopoly will control the market within a very short time and that the English will pass out of the picture so far as domination of the market is concerned. However, the English speculators have been in tight positions before and might still battle further with such great interests at stake. They might possibly buy large quantities of mercury from the monopoly at the monopoly's price and then sell the consumers at a lower price to further prevent the monopoly from reaching the consumer. However, this would entail the loss of very large sums of money in a very uncertain venture.

The buyer must watch conditions in the market very closely for the next month or so, in order to buy if the monopoly does gain control and decide to push the price higher. On the other hand, the buyer must not be too anxious to buy lest the English play a last trump, or lest the monopoly decides to liquidate a portion of its stock at the expense of the American mercury producers.

Milk of Magnesia Trade Mark

Another attempt by McKesson & Robbins to obtain cancellation of the trade mark "Milk of Magnesia" owned by The Charles H. Phillips Chemical Co. was started June 6 in the United States District Court, South Norwalk, Conn.

In its application for cancellation of the mark, McKesson & Robbins maintained that the name "Milk of Magnesia" is common property. Many of the leading pharmaceutical manufacturers represented at the hearing supported this contention.

There has been no question of The Charles H. Phillips Chemical Co. attempting to stop manufacturers in this country from using the mark as may be seen from the fact that the Phillips Company is not suing any manufacturer for infringement. The fact of the matter is that in export markets the mark is defended by the governments and Phillips product is the only product allowed to be sold under the trade mark name. It is open these export markets to all manufacturers that the fight is being made.

G. D. Searle & Co. have issued their new and beautiful catalog and price list of pharmaceutical preparations. In compiling this catalog an effort has been made to follow out the recommendations as to change of names, size, arrangement and descriptive matter made by the Catalog Simplification committee of the A. P. M. A.

The original "Lustrite" package is shown at the left. At the right is the discarded 35c size, and in the center the present 35c size.

How Packaging Helped Rejuvenate *an Old Line*

Repackaging proves to be the biggest step in the successful attempt to restore confidence in the "Lustrite" line of toilet goods.

By Charles G. Muller

PACKAGING seems every day to take on new tasks, and the story of Lustrite is largely the story of a product to which attractive packaging gave second youth when the trade was more than ready to let it die as an old line. Too, packaging has kept the blush of youth continually on Lustrite, for improvements are constantly being made in the line's dress.

According to Ralph Kirkham, president of the Lustrite Corporation, the background is this:

"Beginning as the Floridine Manufacturing Company and distributing through regular jobber and retail channels for about fifteen years, this general cosmetic line grew until it included at one time about 300 items. While some of these had a very large sale and were well liked by the trade, the remainder of the 300 items on the company books proved a great merchandising drag.

"In 1918 the management changed, and the Lustrite Corporation took over the line, reducing it from one of general cosmetics to one of manicure preparations only. Business revived, and dealers and jobbers helped it to make money and to achieve a good success until 1921, when once again it passed out of the picture, this time the cause being financial. With not enough capital to continue regular advertising, Lustrite, after two years of action and prosperity, once more slumped.

"On looking over its prospects, there were several factors that decided me to take it on. Chief among these was the fact that, in spite of the line's having been dormant for two years there still was a retail

demand for the products in it. Allied with this, the trade had a friendly feeling for Lustrite that had not been entirely obliterated.

"It seemed that, if we could revive Lustrite in such a way as to show jobbers and dealers that the rejuvenation was to be permanent and not merely a flash in the pan, a great deal could be done to bring back former prestige. On the appeal of permanence, then, we set out to give a very real second youth to this old line."

Initial efforts were not spectacular. The new management's first move was to set about making personal retail and jobbing contacts locally, through salesmen who covered the New York metropolitan district. Plans were talked over frankly, newspaper advertising schedules were exhibited to prove that there was money behind the rejuvenation plan, and whatever particulars dealers wished to know about the company's reorganization were told them.

Discovered a Latent Demand

During this period, the company found that there existed, besides a very real trade friendliness, a surprisingly large and consistent demand for the line despite the fact that for two years it had been in a state of slumber. However, there also existed that very strong skeptical attitude on the trade's part. Having seen the line spurt twice and then pass out, dealers wanted to be very sure this third time that they were not stocking a product which soon would take to slumber again. As a result of this show-me attitude, Lustrite had difficulty building up distribution during the first six months of its new life. Then the line was completely repackaged.

"This repackaging," says Mr. Kirkman, "proved to be the biggest step we possibly could have taken to restore confidence in our line, for as soon as we put new dress on Lustrite, sales volume began to go up. Psycologically, the move convinced our trade, as nothing else could, that we were sincere in our efforts to give Lustrite new life and that we were in business to stay."

Old Packages Redeemed

The old Lustrite package was of light blue, with a black label. The new one was entirely different, its colors being a deep, rich blue with borders of gold and a band of green on which in white was the Lustrite name. Where the old dress had been neutral, the new stood out distinctively in any company and gave to the line a character which appealed both to the trade and to the consumer.

Old packages were taken back and new given in return, on the principle that whatever action showed the good faith of the company toward its dealers would be profitable in the long run even though it brought no immediate return. In addition to substituting new packages for old, the company set about developing several fast moving items on which it could concentrate its advertising and its dealer effort. For the first six months cuticle ice was played up. Later came a liquid polish, and following that was a cuticle remover in semi-jelly form.

Opening advertisements were in metropolitan rotogravure newspaper sections, backed by copy in a daily paper. On top of this a Sunday magazine section was used, and returns from this advertising so stimulated consumer acceptance that for all practical purposes the company in two years had gained 100 per cent. distribution in the drug and department stores it wished to sell.

Suburban Trade Development

When local trade had been properly cared for, suburban districts within 100 miles were shown that the old line had been given new life, and newspaper coupons were effectively used in conjunction with a post card to the dealer in the inquirer's neighborhood. When a woman filled in the coupon she indicated the name of her local dealer, and the company pasted this coupon on a double post card which went to the dealer with the following message:

> This coupon is from one of our advertisements introducing the new Lustrite cuticle remover. We have sent the samples requested in the coupon.
>
> You will note the consumer states *she buys* toilet goods *at your store.*
>
> As you will undoubtedly desire to capitalize this sales-lead, please mail attached addressed postal card at once.
>
> We thank you for your co-operation.

The attached card so mentioned, with consumer's name and address and dealer's signature already filled in, went to the inquirer with these words from the dealer:

> We are informed by the Lustrite Corporation that you have been mailed the sample of manicure preparations which you requested.
>
> We want to thank you for your patronage and let you know that we are prepared to serve your need for meritorious Lustrite preparations as, indeed, all other standard toilet articles.
>
> Cordially yours (signed by the dealer).

For the mere mailing, without any other effort, the dealer got from this card a very close tie-up between his store and the consumer, and Lustrite got excellent returns for the reason that underneath the pasted-on coupon was printed a special introductory offer which the dealer could obtain on filling in the name of his jobber.

As volume of sales increased and the trade began to appreciate that the old line had really taken on a second and permanent youth, the company added various items such as shampoo and composite manicure sets which, too, were dressed distinctively in the new packaging. But further than this, the company

was to find that consumers themselves wanted even greater package changes.

Cuticle ice, which was the first of the Lustrite featured products to take on the new dress, developed most interestingly. Intended originally for removing cuticle only, it was packaged in a jar holding about one-half an ounce, and the retail sales price was 35c. It began to appear, however, that women and men were finding new uses for this cuticle ice that had not been in mind when the product was first turned out.

Small Jar Too Expensive

"From our customers we began to hear that the ice was very soothing to the skin," says Mr. Kirkman, "and letters giving various other ways in which the ice might be used came to us in increasing numbers. Besides pointing out different ways in which the product could be satisfactorily used, these letters also pointed out that the small jar made it far too expensive for people to use the ice in the new ways."

"This presented a very real problem that in the end resolved itself in our minds into a question of whether total sales might not be increased by making the package larger and by pushing the new uses. We decided to change, to take advantage of what consumers seemed to want. Too, as there recently had become a very real market for 10c packages through the Five-and-Ten-Cent stores, we felt we could somehow take advantage of this, too.

The New Packages

"Accordingly, at the beginning of this year we designed new jars and new cartons. First of all we created a regular 35c package to hold one and one-half ounces, more than three times as much as had been in the old 35c package. Then we designed a new 10c jar whose volume was that of the old 35c size and which was in exact proportion to the new large size. These changes permitted us to please both the regular outlets, in that we kept the popular 35c price, and the 10c market, which could be used both for sampling and for sales."

From size to label and cap, the new package was completely remodeled. Where cap previously had featured only the cuticle removing feature (in recent months also mentioning that the ice was good for chapped hands and sunburn) a new label now read:

Lustrite Cuticle Ice.

Relieves and soothes head colds, (vapor treatment), neuralgia, headache, poison ivy, insect bites.

Relieves—Cools—Soothes.

For sunburn, chapped skin, tire-burning feet, chilblains, molding nail cuticle and as a cleansing cream.

It was the carton itself, however, which underwent greatest changes, for whereas it previously had had no printing except on the bottom where manicure use was mentioned and a few words stressed its generally soothing effect on the skin, the carton now was given over to selling messages while an enclosed folder played up pictorially twelve ways in which the ice might be used by the consumer.

The soothing features were played up on front and back of the carton, and a list of uses was placed on one side panel, with the Good Housekeeping seal on the other panel. The top cover also stressed new uses, and, to make the selling message complete, two inside cover flaps carried two individual uses in detail. So that the story might be told here to greatest advantage, the two uses printed on these flaps were so paired that the consumer always would read of one summer use and one winter use no matter what time of year she bought the package. In the large size package the company enclosed a processed letter to explain how the changes had come about due to suggestions from cuticle ice users.

Uses Illustrated in Folder

The folder which was enclosed with these packages was intended largely to show buyers of the 10-cent size how they might profitably employ the larger, 35-cent package. Twelve pictures illustrated twelve ways to use the ice, and a note beneath these pointed out that while the ice was not recommended as a substitute for medical remedies in five of these uses, it would be found nevertheless to be an agreeable and effective help in allaying the conditions referred to.

Advertising of these new sizes based on increased use is, according to Mr. Kirkman, being limited for the time being mainly to the trade, with the thought in mind that before going to the consumer with a large advertising campaign it is wise to test general consumer reaction first.

"This new packaging literally is just another indication to our trade that the old line to which we gave new youth five years ago is continuing to rejuvenate itself from year to year; that it is keeping abreast of modern merchandising conditions not only in general packaging but in meeting specific consumer desires through the radical remodeling of packages when circumstances indicate that such complete change will help both our trade and ourselves."

U. S. Food and Drug Men Confer

Members of the field service of the Food, Drug and Insecticide Administration, United States Department of Agriculture, met with chiefs and staff members of the Washington office during May to discuss projects and lay plans for the work of the next fiscal year.

Representing the Eastern District, with headquarters at New York, were W. R. M. Wharton, chief; C. O. Dodge, assistant chief; M. Wolfson, chief clerk and Charles A. Herrmann, administrative assistant. From the Central District, with headquarters in Chicago, were J. O. Clarke, chief; Harry Walters, assistant to the chief; B. D. Bisbee, assistant to the chief; and A. E. Paul, chief of the Chicago station. From the Western District were Wendell Vincent, chief, P. B. Clark, assistant to the chief; A. P. Koons, assistant to the chief; and L. D. Elliot, chief of the Denver station.

Is Narcotic Control Proving Ineffective?

Recent Attacks from Various Sources on the Work of the Federal Narcotics Control Board Receive an Official Answer

THE Narcotic Division of the Prohibition Bureau is one of the busiest places in the country just now preparing for possible reorganization in connection with changes suggested in prohibition administration, co-operating with President Hoover's law enforcement commission, and gathering information for use in connection with next meeting of the Federal Narcotics Control Board, to be held in October, for the purpose of considering curtailment of the allotment of importations of crude narcotic materials for next year.

Col. L. G. Nutt

It has become known that administration officials do not want the work of narcotic law enforcement transferred from the Treasury Department. This is the view of drug trade interests also, who point out that the narcotic law is a taxation or revenue measure, which could properly be administered nowhere else than in the Treasury. Anticipating the possibility that portions of the prohibition work, with which narcotic enforcement is now grouped, may be transferred from the Treasury to some other department of the government, Narcotic officials have drafted legislation to meet the situation.

At the proper time, it is proposed, Representative Stephen Porter of Pennsylvania, who has long taken a most active interest in various phases of the narcotic situation, shall introduce a bill to provide for a separate Narcotic Bureau in the Treasury Department. There is understood to be reason to believe that some such legislation would receive the approval of the Department.

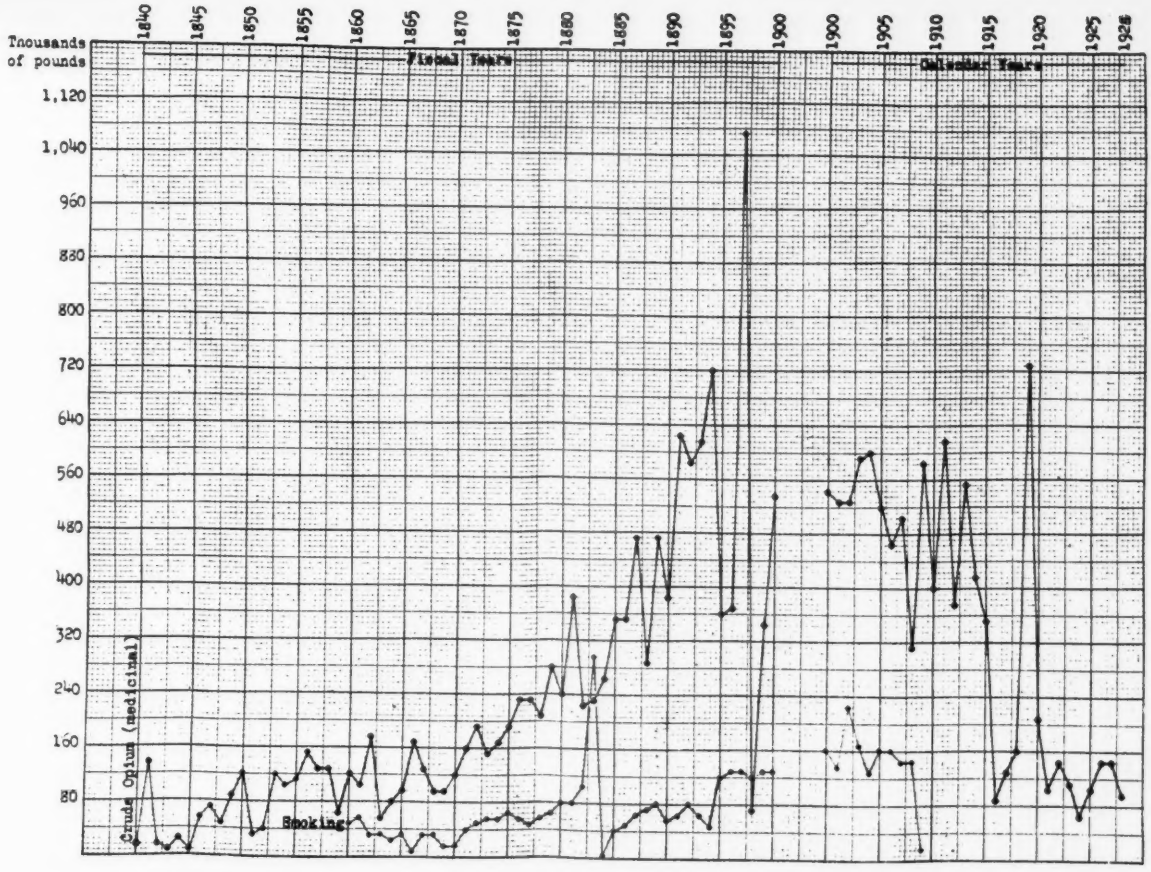
The Department also approves bills introduced by Representative Hamilton Fish of New York which would authorize narcotic enforcement officials to purchase information for use in prosecuting violations of the narcotic laws, and would provide for the deportation of aliens convicted of violating the narcotic laws.

Narcotic officials also view with approval a resolution introduced by Representative Black shortly before the special session of Congress recessed for the summer, declaring that the House request the President to call an international conference in Washington to negotiate an agreement to limit the production, manufacture, sale and distribution of opium and narcotic drugs to the legitimate medical and scientific requirements of the world.

The narcotic law, like other laws, is being investigated by the law enforcement commission, which is asking the Narcotic Division for data bearing upon problems of narcotic law enforcement. A force of experts and clerks is engaged in preparing this information.

Having announced a tentative reduction in crude opium that may be imported, viz., to 134,400 pounds during the fiscal year ending June 30, 1929, as compared with 140,172 pounds actually imported in the preceding fiscal year, the Federal Narcotics Control Board is working out details of its plans for regulating such imports, as part of the general program of transferring narcotic import control from the basis of the fiscal year beginning July 1 to that of the calendar year. In this connection there have been suggestions that the board, at its fall meeting in October, may hold public hearings on the question of the amount of narcotic materials that should be allowed to be imported.

Col. L. G. Nutt, secretary of the Board, states that information will gladly be received from persons qualified to state what are the medicinal and scientific requirements of the United States, in crude opium and coca leaves, although he doubts the practicability of public hearings on the subject. Col. Nutt states that the Board has sought information from the U. S. Public Health Service on this question and has been advised that the Board was believed to have more



Importations of Opium for the Calendar Years 1840 to 1928, inclusive. (Estimated Population 1840 - 17,069,453; 1928 - 120,379,470)

knowledge than the Service. The Colonel states also that the Board has sought information from the American Medical Association and has gotten some through Dr. Woodward, its liaison officer, but it is understood that the association has frowned upon a proposition to questionnaire its members in connection with the matter of the legitimate consumption of narcotic drugs.

If it be possible to reduce still further importations of crude opium and coca leaves, narcotic officials would be willing to bring about such reduction, it is stated, but Narcotic Board officials feel that they can not afford to take chances on going below the actual medicinal and scientific requirements of the United States, which is the legal yardstick by which it is required that such importations be measured. Officials do not appear to view with favor the suggestion that allotments of importations be reduced very materially and then that special provision be made for a reserve of narcotics in the country for use in case of emergency such as war or epidemic.

Narcotic officials and drug trade representatives point out that the legitimate importation, manufacture, distribution, sale and dispensation of narcotic drugs is carried on in the United States only under permits issued by the Narcotic Board or the Narcotic Division, or in accordance with official orders. Admitting that there is some smuggling of narcotics for the illegitimate trade, officials deny that the American drug trade are the beneficiaries of such smuggling.

Apparently large increases in crude narcotic importations for a recent period of years and apparent discrepancies between statistics of narcotic drugs sold in this country and of crude opium available for their production are explained by officials in a statement made public for the first time at the request of Drug Markets. The statement also discusses the apparent excessive annual consumption of opium derivatives in the United States, as compared with the so-called League of Nations quota of 450 milligrams, or about seven grains of opium, per capita. In connection with this latter point, officials and drug trade representatives point out that the apparent American annual per capita consumption of approximately nine grains includes codeine, which has largely been substituted for heroin and in many instances for morphine and which is used to a considerable extent in the treatment of respiratory diseases, whereas codeine is not regarded as a habit forming drug and is not subject to government regulation as a narcotic and is therefore not reported as a narcotic drug throughout the entire British Empire and in many other countries of large

population that are included in the so-called League quota. Also, codeine requires more opium for its production than do other narcotic derivatives. The official statement on the narcotic importation and manufacturing situation in the United States issued under Col. L. G. Nutt's name follows:

Representations have recently been made criticizing the Federal Narcotics Control Board for permitting the importation into the United States of larger quantities of narcotic drugs than necessary for medical and legitimate needs. Inasmuch as statistics, to the extent quoted in the articles, and the deductions made lend color of plausibility to the criticism, it has been deemed appropriate to give a more complete and detailed presentation of the situation as it actually existed even prior to 1921 and as it now exists, to correct erroneous impressions that may be obtained.

The articles in question may be divided into three principal items of criticism:

First. Excessive or increasingly large importations of opium from 1921 to 1928 inclusive, without a corresponding increase in population and without information of any devastating plague or epidemic.

Second. Excess of opium alkaloids or derivatives sold by manufacturers over quantities theoretically available from opium imported during the period.

Third. Excess annual per capita consumption of opium and its derivatives in the United States as measured by the figure of 450 milligrams of opium tentatively fixed in 1925 by Advisory Committees of the Council of the League of Nations.

Preliminary Statement

Figures for imports of opium as given in the annual reports of the Commissioner of Internal Revenue and the Commissioner of Prohibition respectively for the periods 1921 to 1928 inclusive are upon the fiscal year rather than the calendar year basis. These figures are compiled from monthly returns submitted by importers and manufacturers registered under the Harrison Narcotic Law, as amended, but although the Harrison Narcotic Law was approved December 17, 1914, it was not until the passage of the Revenue Act of 1918 on February 24, 1919, that authority existed for requiring such returns from importers and manufacturers. There was naturally some delay in providing a suitable system of returns under this act and it was not until March, 1920, that the first monthly returns were rendered by registrants. Some difficulty was naturally experienced in inculcating in the minds of those charged with the duty of rendering returns the proper method of reporting thereon all importations, purchases, sales, etc., in the proper manner. It was not until the fiscal year 1921 that reasonably accurate and reliable reports were obtained and even for this fiscal year the figure of 47,024 pounds for total opium imported does not include all opium actually imported during that fiscal year for the reason that quantities imported by a dealer but sold by him while in customs custody would not be taken up on his return as imported, and the vendee or a subsequent purchaser who actually removed the opium from customs custody would report same merely as withdrawn from customs custody, rather than as an importation. It is conservatively estimated that there were at least 30,000 pounds more opium imported during the fiscal year 1921 than are shown by the figure compiled from internal revenue returns. The figures shown for subsequent fiscal years, particularly from the fiscal year 1923 to 1928 inclusive, are correct, however, because under regulations issued under the Narcotic Drugs Import and Export Act shortly after the act became effective opium was permitted to be entered for importation for consumption only.

Excessive or increasingly large importation of opium from 1921 to 1928 inclusive, without a corresponding increase in population and without information of any devastating plague or epidemic.

For the purpose of intelligently testing the effectiveness of the limitations upon imports of opium imposed by the Federal Narcotics Control Board, and to remove any doubt that may exist with respect to what was actually imported during the period 1920-21-22, there is given below a statement of imports of opium, morphine, and all other opium alkaloids and derivatives, *by calendar year periods*, from 1910 to 1928 inclusive, these figures having been obtained for the period 1910-21 inclusive, from Department of Commerce statistics which are compiled from customs figures, and from the internal revenue returns for the period 1922-28 inclusive, upon which imports were properly reported, and these figures should be sufficiently reliable as to the amounts of these narcotics which actually entered the country during the periods indicated.

	Calendar Years	*Fiscal Year*	
	Opium Net quantity Pounds	*Morphine* Net quantity Ounces	*Other Opium Alkaloids and Derivatives* Net quantity Ounces
Imports:			
1910	396,671	13,082	
1911	613,899	20,345	
1912	374,661	13,825	
1913	552,648	24,797	
1914	415,990	5,805	
1915	351,955	1,383	
1916	90,608	2,685	
1917	124,764	5,584	
1918	159,621	25,215	
1919	730,272	25,370	56,895
1920	211,277	7,460	28,793
1921	101,668	317	3,825
1922	144,906	2,124	2,522
1923	111,666		
1924	64,249		
1925	107,267		
1926	142,942		
1927	140,936		
1928	98,296		

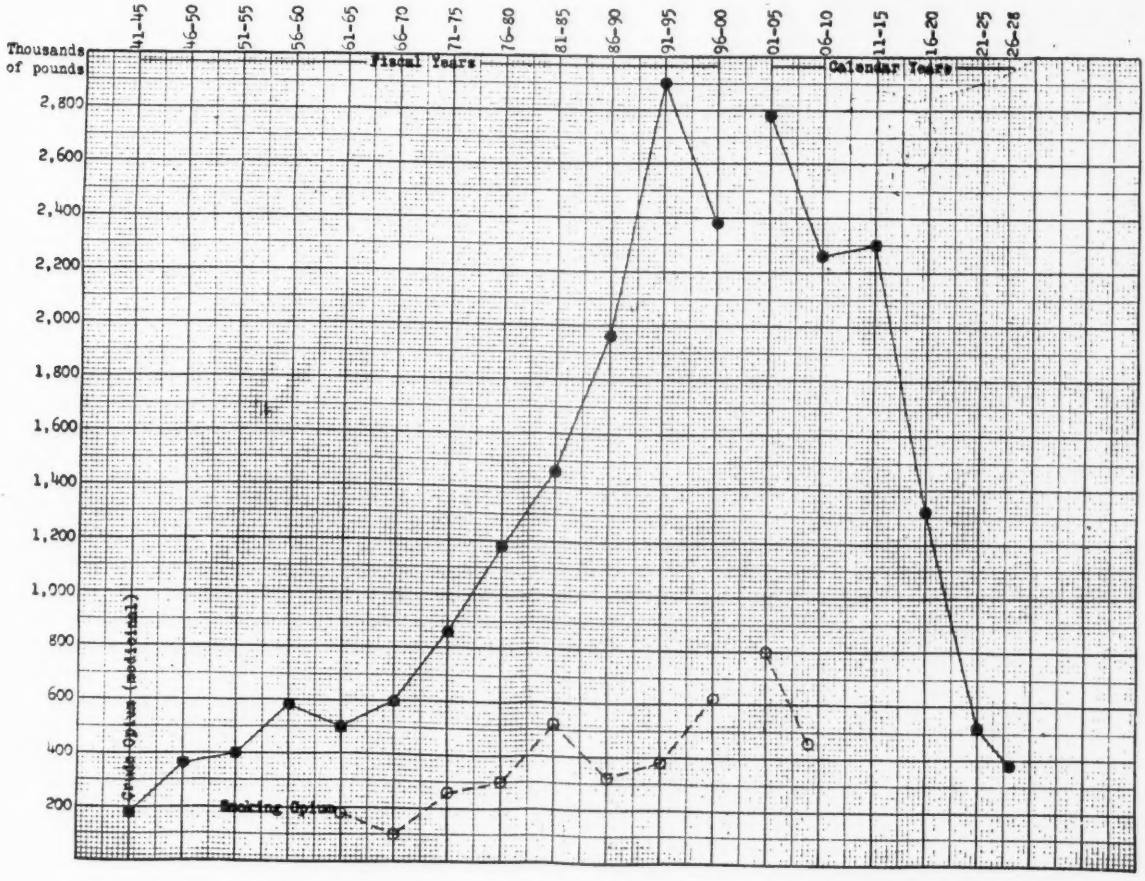
The chart shows importations graphically. From the date the Control Board began to function in 1922 through 1928, the yearly average importation of opium amounts to 110,892 pounds whereas for the period from 1910 to 1922 when no such system of control existed, the yearly average importation amounted to 328,380 pounds. Thus the efficiency of the limitation imposed by the Board is clearly reflected in an average annual decrease in importations of opium of approximately 66-2-3%, and this notwithstanding the fact that no quantity of opium derivatives such as morphine and heroin were lawfully imported subsequent to 1922 as they could be and were lawfully imported to supplement the large quantities of opium imported in the years prior to 1922.

Particular attention is called to the peak figure for importations in the year 1919, 730,272 pounds, and to the large figure of 211,277 pounds imported during the year 1920. The peak figure for 1919, which is clearly in excess of medical needs during an annual period, was made possible by the general resumption of international trade after the war, coupled, no doubt, with a desire on the part of importers to avoid in so far as possible the payment of the new internal revenue commodity tax of one cent. per ounce upon imported opium, imposed by the Act of February 24, 1919. This large importation as well as the importation of 211,277 pounds during the year 1920 was made, of course, in the absence of adequate governmental restriction upon imports such as is represented by the machinery provided by the Act of May 26, 1922. Furthermore, the additional importation during 1919 of 25,370 ounces of morphine and 56,895 ounces of other opium derivatives, and the additional importation during 1920 of 7,460

ounces of morphine and 28,793 ounces of other opium derivatives cannot be ignored when considering supplies of narcotic drugs probably available within the country at the beginning of the year 1921.

When the Federal Narcotics Control Board effected an organization in March, 1923, to make the first periodical inquiry into the medical needs of the United States with respect to crude opium under the Narcotic Drugs Import and Export Act, there were available statistics for stocks in the hands of importers and manufacturers as of June 30, 1922, approximately as follows: 31,646 pounds of opium, 5,132 pounds of morphine, 3,624 pounds of codeine, 696 pounds of heroin, and 102 pounds of dionin. The Board, however, could and did take cognizance of the fact that the country as a whole was in a much better position with respect to stocks of narcotic drugs on hand than these figures would indicate since it was aware of the excessive importations of opium during 1919 and 1920 and knew that the importers and manufacturers had sold domestically during the fiscal year 1921, 19,727 pounds of opium, 321,715 ounces of morphine, 94,507 ounces of codeine, 16,635 ounces of heroin, and 5,512 ounces of dionin, a large portion of which domestic sales could be presumed to remain in stocks of wholesale dealers, druggists and physicians as of July 1, 1922. Realizing these facts the Board made considerable reductions in total amounts of opium permitted to be imported during 1923 and 1924, for the purpose of exhausting to some extent the reserve stocks of all forms of opium and derivatives which existed in March, 1923. Under the Act of June 7, 1924, the importation of opium for the manufacture of heroin was prohibited, it being thought that this particular derivative was so dangerous that it might properly be outlawed especially when it was determined that there was no medical need for it which could not reasonably be met by a substituted opium derivative. The result was that manufacturers ceased production of heroin and in lieu of this drug there was substituted in medical practice to some extent morphine but to a greater extent codeine, particularly in the treatment of respiratory diseases. In order to obtain the same medicinal effect represented by a dose of the powerful drug heroin in a given case however, a proportionately larger dose of the less potent codeine had to be administered but a given amount of crude opium yields approximately the same quantity of codeine as it would have yielded of heroin. Consequently, the substitution of the less dangerous codeine for heroin actually made necessary the importation of larger quantities of opium to take care of the same medicinal needs and this increase obviously did not represent the abuse of narcotics in the nature of catering to addiction.

Independently of the foregoing consideration however, there can be no doubt that there has been an increased demand within this country for codeine during the past few years in the treatment particularly of respiratory diseases. During the first four months of the year 1926 representations were made to the Board that a mild influenza epidemic had resulted in increased sales of codeine by the manufacturers. For the first portion of the year 1928 the Surgeon General of the United States Public Health Service attributed the abnormal weather conditions, manifested generally throughout the country in changing weather and the late arrival of spring, as a cause for the increased number of deaths resulting from influenza and pneumonia. It is a matter of public knowledge that an epidemic of influenza of serious proportions swept a large section of the United States during the latter part of 1928, and was accompanied and followed by increased sales of codeine by all manufacturers thereof. Efforts were made



Importations of Opium for each five year period, 1841 to 1928, inclusive. (Estimated Population 1840 - 17,069,453; 1928 - 120,379,470)

on behalf of pharmaceutical and wholesale drug houses to have emergency action taken to import codeine from European countries upon the plea that domestic manufacturers were unable to meet the legitimate domestic demand in view of epidemic conditions but through the prompt co-operation between the Board and domestic manufacturers the emergency was successfully met and no drastic measures were necessitated, although stocks on hand were considerably depleted.

It is possible that a more enlightened understanding of the dangerous effect of respiratory diseases has caused a greater proportion of the population, when afflicted therewith, to seek medical aid than has previously been the case, and codeine is one of the drugs understood to be indicated for the treatment of respiratory diseases generally. With the increased demand for this particular derivative for bona fide medicinal purposes, it is, of course, necessary to increase proportionately imports of opium from which it is made and an increase in importation of opium for this purpose should give no cause for alarm.

The Decrease in Stocks

On July 1, 1923, there were in the hands of domestic importers and manufacturers, a total of 1012,894 ounces of opium, 79,483 ounces of morphine, 42,507 ounces of codeine and 17,731 ounces of heroin. On July 1, 1928, there were in the hands of importers and manufacturers 389,184 ounces of opium, 83,103 ounces of morphine, 53,058 ounces of codeine and 1,828 ounces of heroin. These figures reflect a net decrease in stocks on hand of opium and its derivatives during the five year period. In considering stocks of narcotic drugs on hand in this country it is important to remember the position of the United States with respect to distance from the source of supply of the raw material, the time required to manufacture narcotics for consumption after arrival of the crude opium, the possibility of a sudden urgent demand upon such stocks due to epidemics, floods, or other national emergency, and the possibility of unsettled political conditions closing up the Near East ports, or other serious interruption to shipments of opium through the Mediterranean. The stocks of narcotic drugs within the country are not excessive and are not permitted to become so.

Excess of Opium Alkaloids or Derivatives sold by manufacturers over quantities theoritically available from Opium imported.

This criticism is based upon the computation that during the period from 1921 to 1928 inclusive, a total quantity of opium was imported sufficient to have produced 42 tons of opium derivatives such as morphine, codeine, etc., based upon a ten per cent. yield from such opium, whereas the domestic sales of morphine, codeine, dionin and other alkaloids over the same period amounted to 68 tons of these derivatives. The critics of the Board suggest four explanations for this apparent discrepancy of 26 tons which are first, that there were or are immense reserves in the country left over before the Federal Narcotics Control Board was established; second, contraband opium has been supplementing the legal imports; third, contraband drugs are included in the domestic sales; fourth, the opium imported is far richer than ten per cent. in morphine.

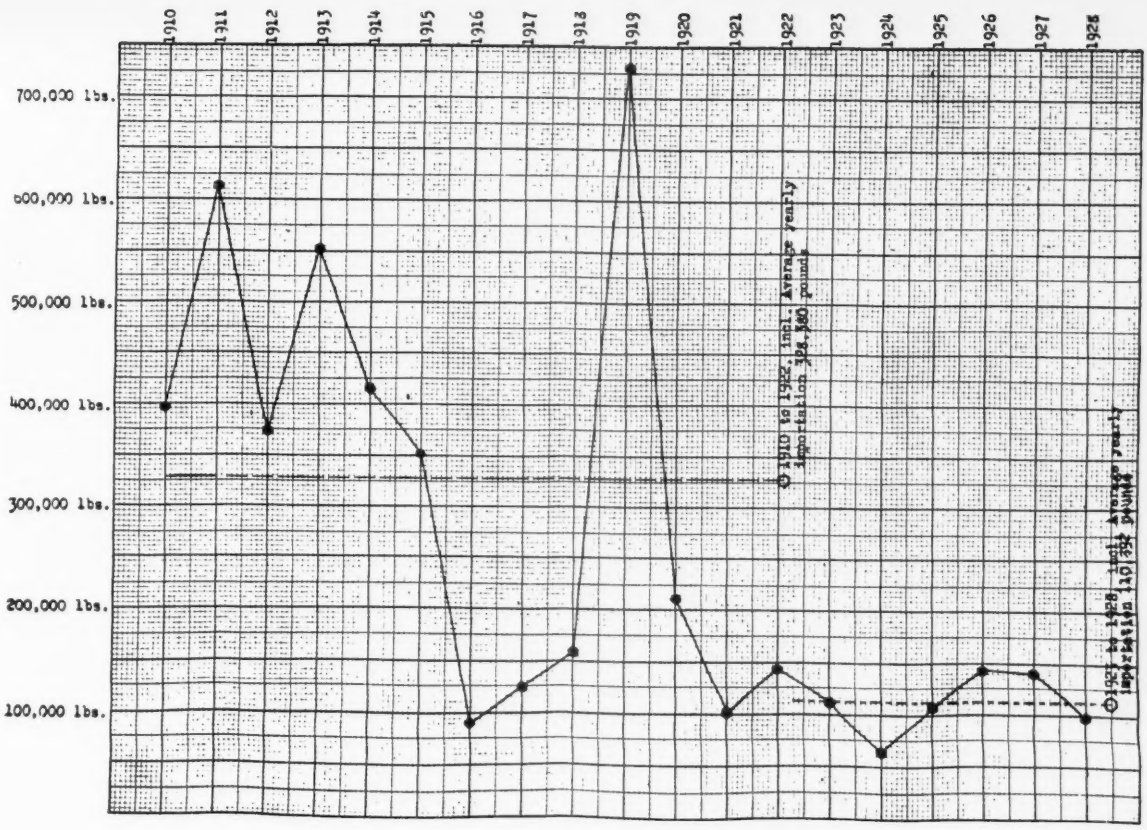
Critics Overlook Opportunities

At the outset it should be noted that the critics of the Board have overlooked other domestic sales which would make an even larger apparent discrepancy than 26 tons. They did not include total domestic sales during the period of 89,843 ounces of heroin nor total domestic sales of 188,166 pounds of opium in all forms. Including these amounts in the total domestic sales for the period and subtracting from this total the amount theoretically available from the crude opium imported we obtain an apparent discrepancy of approximately 37 tons of opium derivatives instead of 26 tons.

In analyzing the annual domestic sales for this period it is at once apparent that the larger sales took place during the first two or three years beginning with 1921, during which year more than ten tons of morphine alone were sold. It is quite obvious that the domestic sales of opium and derivatives for 1921 and 1922 were made in large part from stocks of opium or manufactured derivatives on hand prior to 1921. This is clearly shown by analysis of the statistics for these two years. The sales of morphine, codeine, heroin and dionin for 1921 and 1922 totaled 46,985 pounds and there were on hand at the close of the period 9,554 pounds of these miscellaneous derivatives or a total to be accounted for of 56,539 pounds. Of crude opium imported during 1921 and 1922 there were 182,117 pounds and as has heretofore been shown the figures for opium imports for 1921 having evidently been understated, we may add 30,000 pounds of opium to the last-mentioned figure as the estimated amount of the understatement, making a total quantity of opium available during the two year period from imports of 212,117 pounds. Based on a ten per cent. alkaloidal yield, this quantity of opium would account for 21,212 pounds of derivatives but 56,539 pounds of derivatives were to be accounted for and to this last figure we must add 8,368 as representing the morphine equivalency of 83,680 pounds of opium in all forms sold domestically during the period. Subtracting the figure representing alkaloidal yield from the opium actually imported during the two year period from the figure representing the total of domestic sales and stocks on hand of the derivatives during and at the end of the two year period we have a difference of 43,695 pounds or nearly 22 tons of derivatives which must either have been manufactured from opium imported prior to 1921 or must represent in part derivatives imported prior to that date. This office is not in possession of figures showing stocks on hand as of July 1, 1921, because its system of accountability had not yet been sufficiently perfected by that time under the Act of February 24, 1919, to show complete and reliable information. It is quite clear from the peak figure for importations of crude opium of 730,272 pounds in 1919 and the large figure of 211,277 pounds for 1920, together with the large figures for importations of morphine and other opium alkaloids which were made during 1919 and 1920, that there were ample supplies of narcotic drugs within the country prior to 1921 to account for 22 tons of derivatives sold during 1921 and 1922.

Efficient Enforcement Not Immediate

The Board is not, of course, responsible for importations of excessive supplies of opium prior to the time it was created and commenced to function on and after May 26, 1923. That there were excessive supplies of opium admitted into the country prior to 1922 and that there did not exist prior to that time an efficient system of control over imports cannot be doubted. It must be remembered that although the Harrison Narcotic Law was enacted December 17, 1914, a considerable period elapsed before the present efficient degree of enforcement of that act could be attained. It was not until March, 1919, that the United States Supreme Court first upheld the constitutionality of one section of this act which perhaps more than any other section of the act restricted the diversion of narcotic drugs from legitimate medical channels. After the United States Supreme Court had declared Section 2 of the act constitutional and on the same date had in effect condemned the prescribing of narcotic drugs for addicts for the purpose only of maintaining their customary supply the Federal officers charged with enforcement of this act were made much more cognizant of their duties thereunder and during the years immediately following a more active campaign against the narcotic peddling activities of the unethical doctor and druggist was instituted. During the fiscal year 1921 a total of 44 narcotic clinics were closed throughout the United States through the influence of Federal enforcement officers inasmuch as these clinics were merely catering to drug addiction and were serving no useful purpose in decreasing drug addiction. Several prosecutions against doctors and druggists for violation of the Harrison Narcotic Law were successful and had a wholesome influence in acquainting these professions generally with their obligations under the Federal law. The large sales of morphine during the first three years from 1921 to 1923 inclusive, represent



Importations of Opium for the Calendar Years 1910 to 1928, inclusive.

in part the diversion of narcotic drugs from bona fide medical channels as now recognized without doubt but, at the end of the year 1923 at least, the medical and pharmacal professions were fairly well informed on the subject of their rights and duties under the narcotic law and from the period 1925 to 1928 inclusive, domestic sales of morphine represent more accurately the medical and legitimate needs of the country for this particular opium derivative.

There were in customs custody on June 30, 1920, according to statistics obtained from the Department of Commerce, 116,043 pounds or 58 tons of crude opium which were not included in the amounts of opium shown as imported during the fiscal year 1921 or subsequent years but which were nevertheless withdrawn and available for manufacture and sale of opium derivatives during the fiscal year 1921 or subsequent years. Based upon a ten per cent. yield this quantity represents 5.8 tons of alkaloids manufactured and sold during or subsequent to the fiscal year 1921 but which were not manufactured from opium imported during or subsequent to 1921.

Mention has already been made of the possible understatement of imports of opium for the fiscal year 1921 which, again based on a ten per cent. yield, is estimated to be equivalent to one and one-half tons of alkaloids.

The computation of opium derivatives sold during the period 1921 to 1928 inclusive, with relation to the respective amounts of crude opium imported during each year of the same period is based it will be noted, upon a ten per cent. yield from the opium in terms of morphine alkaloid. In criticizing the system of drug control in the United States, the statement is made that of late years opium has greatly increased in richness or in morphine value. While prior to 1928 the Board did not receive definite reports of the morphine content of opium imported, it nevertheless understood that our domestic importers endeavored to obtain the highest grade of crude opium for manufacturing purposes. There is nothing, therefore, to indicate that the use of opium of a higher morphine content than ten per cent. represents a recent development in the manufacture of opium derivatives, at least in so far as American manufacturers are concerned, nor is there anything to indicate that opium of higher morphine content than ten per cent. was not available for importation as far back as 1921 or earlier. The Board was aware, of course, that the higher grade opium was being imported and during the first part of the present fiscal year one large manufacturer reports the average morphine content of opium imported as 12.28% according to his assay. If the average yield of morphine was twelve per cent. instead, of ten per cent. there would be a difference in morphine alkaloid, obtained from 859,351 pounds of crude opium imported during the period, of 8-3-5 tons of morphine alkaloids but there is another factor which must be considered in comparing domestic sales of morphine with quantities of opium imported during a given period and this relates to the character of morphine sold. Figures reported for domestic sales of morphine include all types of morphine sold such as morphine sulphate, morphine acetate, apomorphine, etc. The form of morphine which represents the great majority of domestic sales under that heading is morphine sulphate. There has been testimony before the Board that, roughly speaking, four parts of morphine alkaloid will make five parts of morphine sulphate and it will be remembered that the morphine yield of crude opium as heretofore discussed is computed in terms of alkaloidal yield. If domestic sales of morphine represent principally morphine sulphate then this heading will, of course, account for a proportionately smaller quantity of morphine alkaloid. that is to say, in the ratio 5:4, and applying this ratio to the total domestic sales of morphine as reported for the period of 1,202,184 ounces to obtain the alkaloidal equivalency, we obtain an additional reduction of 7½ tons

of opium derivatives in the apparent discrepancy of 37 tons previously mentioned in this statement. A similar reduction must be made in the total domestic sales of opium as reported for the period, since this total figure includes sales of deodorized, granulated and powdered opium, the U. S. P. standard for which is not less than ten per cent. nor more than 10.5 per cent. of anhydrous morphine, since crude opium of greater morphine content will produce a proportionately greater quantity of U. S. P. deodorized, granulated or powdered opium. Taking all factors into consideration it will be seen that there is no discrepancy between the opium actually imported and the sales of derivatives produced from such opium. There is absolutely no foundation for the proposition contraband opium has been supplementing legal imports nor that contraband drugs are included in the domestic sales in legitimate channels.

> Excess annual per capita consumption of opium and its derivatives in the United States as measured by the figure of 450 milligrams of opium tentatively fixed in 1925 by Advisory Committees of the Council of the League of Nations.

Considerable stress is placed by those criticizing the Board upon a standard figure, said to have been fixed by the Health Committee of the League of Nations several years ago, of seven grains or 450 milligrams of opium as the annual per capita requirements for opium and its derivatives of any country. In 1923 the United States upon being invited to submit its estimates, communicated same to be a total annual requirement of about 136,000 pounds of gum opium or expressed in terms of morphia contents, it was considered that the per capita requirement was ⅞ or .875 grain. The reports of the various governments to the investigating committee were evidently carefully considered and the result is shown in Vol. II of the Records of the Second Opium Conference (Document C. 760. M. 260. 1924. XI) entitled "Meetings of the Committees and Sub-committees", the pertinent matter being included in the minutes of Sub-Committee F shown on pages 284 and 286-7 of the document cited. The following is quoted from the minutes of the first meeting of Sub-Committee F, page 284:

> "The Advisory Committee on Traffic in Opium and other dangerous Drugs had considered the question of the legitimate requirements of opium and other narcotics in connection with the general problem of limiting the production and manufacture of these substances. The investigation had been carried out by a joint Committee, composed of two members of the Advisory Committee on Traffic in Opium and two members of the Health Committee, under the chairmanship of Dr. Carriere. This Mixed Sub-Committee had examined the replies of Governments to a questionnaire, but had found that the requirements of the various States in opium and other drugs differed so greatly that no final figure for the total world requirements could be reached. Researches had accordingly been carried out by Dr. Knaffl-Lenz, on behalf of the Health Organization. He had examined the statistics of hospitals and of health insurance societies in Switzerland, Germany and Austria, and the figures he had obtained had been surprisingly alike for all three countries.
>
> "By combining the figures obtained by Dr. Knaffl-Lenz and the answers to the questionnaire the Mixed Sub-Committee had finally submitted a report stating that 600 milligrammes of raw opium per head of the population might be taken as an approximate of the total annual legitimate requirements of the world. For the purpose of this calculation, the Mixed Sub-Committee had defined legitimate requirements as meaning requirements solely for medical and scientific purposes. One of its members had expressed reservations regarding this definition.
>
> "The report of the Mixed Sub-Committee had been examined by the Health Committee, which had, after further investigation, reduced the figure 600 milligrammes to 450 milligrammes. This figure had been further safeguarded by three reservations:
>
> (1) The figure 450 milligrammes of raw opium per head per annum was to be considered as the maximum requirement;
>
> (2) It should apply only to countries which possessed a highly developed medical organization;
>
> (3) It should not be taken as a basis for restricting the amount of opium and other drugs used in any particular country, but merely as a basis for calculating the general world requirements."

It is interesting to note that the figure of 600 milligrams per capita as at first determined was later reduced to 450 milligrams per capita by the Health Committee. From the minutes of the fifth meeting of Sub-Committee F the following excerpts are quoted:

"The Sub-Committee adopted the recommendations in question in the following form:

> 'The Sub-Committee of the International Opium Conference set up to examine the report of the Health Committee of the League of Nations regarding the legitimate needs of opium and its derivatives;
>
> 'Considers that these requirements might be fixed at the round figure of 450 milligrammes of raw opium at 10 per cent. of morphine per head per annum;
>
> 'It being understood, however:
>
> 'That this figure represents a maximum, and as it was established solely on the basis of estimates furnished by countries possessing a highly developed system of medical assistance, it can only be applied to countries where similar conditions obtain;
>
> 'That, since this figure is primarily intended to serve as a basis for the reduction of the world production of opium and the manufacture of its derivatives, it must be considered solely from this point of view and not from the point of view of the consumption in each individual country.
>
> 'The Sub-Committee would, moreover, point out:
>
> 'That the figure of 450 milligrammes only very incompletely takes account of the quantities of morphine consumed in the form of codeine, as the requirements of this alkaloid vary widely in different countries and only a few States have supplied accurate information with regard to it;
>
> 'That the figure of 450 milligrammes must be considered as applying only to the normal legitimate requirements and not to certain exceptional circumstances, such as wars, epidemics or new scientific uses which may considerably increase the sum-total of these requirements.' "

The Sub-Committee, it will be noted, adopted the recommendation as to 450 milligrams per capita per annum with the understanding that this figure be primarily intended to serve as the basis of reduction of the world production of opium and the manufacture of its derivatives and that "it must be considered solely from this point of view and not from the point of view of the *consumption in each individual country*." Furthermore, the Sub-Committee pointed out that this figure "*only very incompletely* takes account of the quantities of morphine consumed in the form of codeine, as the requirements of this alkaloid vary widely in different countries and only a few States have supplied accurate information with regard to it" and that the figure "must be considered as applying only to the normal legitimate requirements and not to certain exceptional circumstances, such as wars, epidemics or new scientific uses which may considerably increase the sum-total of these requirements." The much discussed standard figure of 450 milligrams of opium per capita was therefore not a fixed and definite standard as seems to be understood by many who are unfamiliar with the circumstances under which the determination was received. Admittedly the figure

very incompletely took account of quantities of morphine consumed in the form of codeine. It is at least very doubtful whether it took account of quantities of opium and opium derivatives which are used in the so-called exempt preparations, that is to say, medicinal preparations containing not more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one grain of codeine per ounce, such preparations being allowed to be sold as medicines under our law without a physician's prescription and being furthermore specifically excepted and entirely outside the scope of the International Opium Convention of 1912. On the other hand, the Committee evidently did take into consideration the medicinal use of heroin which has since been banned under our law and codeine substituted, causing a proportionately larger demand for codeine and consequently for crude opium, without, of course, a corresponding increase in the sale of more dangerous derivatives as has previously been shown.

Without doubt there has been an increase in sales of codeine since 1924 and probably there would have been some increase in these sales even had heroin not been banned. In the opinion of the Board this has been due to a bona fide legitimate increase in the use of codeine for medicinal purposes, particularly in view of the prevalence of influenza and other respiratory diseases in which codeine is indicated, and to an increase in the proportion of population seeking medication involving the use of codeine in addition to and aside from the normal increase in total population. No one conversant with medical opinion on the subject will seriously assume that the increase in the use of codeine represents the abuse of this drug in the sense that an increase in the use of morphine might arouse suspicion in this respect, and the domestic sales of morphine during the past four years most certainly can occasion no suspicion of abuse by reason of any increase, the figures for domestic sales for these years being as follows:

1926	106,164	ounces
1926	106,871	"
1927	105,434	"
1928	105,155	"

In computing the per capita consumption of the United States in terms of opium and its derivatives, excepting codeine and its salts, the annual report of the United States published the figure of 4,776 grains or 310.44 milligrams. Attention was invited to the fact that codeine and its salts were eliminated in arriving at this figure. Thus no attempt was made to conceal the manner in which the figure was computed. Several countries including those of the British Commonwealth of Nations, are understood to have eliminated codeine entirely from governmental control over the traffic in opium and the more dangerous derivatives such as morphine and heroin. In other words, codeine may freely be imported and sold just as any other commodity under the theory, apparently, that this drug is not a dangerous habit-forming one. The International Opium Convention of 1912 does not obligate the High Contracting Powers to exercise any supervision over the importation, exportation and sale of codeine, and while the United States does exercise the same control over codeine and its salts as over morphine and its salts and does not wish to relax its control in this respect for reasons which it is not necessary to set forth here, it does not wish to be understood as criticizing other countries for failing to exercise complete control over the sale and use of codeine. Nevertheless, if other countries report a per capita consumption of opium and its derivatives that does not include codeine requirements, and it seems that this must be the case if the importation and sale of codeine is subject to no control, it would be unfair for the per capita figure reported by the United States as for all derivatives to be compared with per capita figures of other countries excluding codeine and its salts. Hence, the per capita figure of the United States excluding codeine was furnished and particular attention was called to this fact as well as to the figure representing the domestic sale of codeine from which any one interested might easily compute the total per capita consumption. The United States need not and, therefore, does not make any apology for its per capita consumption of opium and its derivatives in all the forms in which they are sold domestically. There is no better evidence of this than the fact that no other nation has offered the slightest criticism of the domestic sale and use of narcotic drugs within the United States as would most certainly have been the case did there exist any tenable ground for such criticism. That there will be some diversion of narcotic drugs from legitimate channels, particularly with respect to certain unscrupulous physicians and druggists, in view of the great temptation of high prices in the illicit market, is inevitable and undoubtedly will always exist in some degree. Increased co-operation between all countries and all forces within all countries must be continually sought to the end, not only that this diversion be kept to a minimum but, what seems more important at this time, that the more dangerous illicit international and national traffic be also reduced to a minimum.

{ *Industry's Bookshelf* }

An Hour on Health by Morris Fishbein, M. D., editor, Journal of the American Medical Association. 4½ x 7¼ in., 158 pages, cloth. $1. J. P. Lippincott Company, Philadelphia.

Tired businessmen, stenographers, physicians, pharmacists, chemists, dilettantes in the ways of mere humans; men and women in general, both old and young, can gain both profit and entertainment by spending an hour or so some evening in reading the latest work from the facile pen of the versatile editor of the official journal of the American Medical Association.

The scope of this little book can well be illustrated by listing the subjects included in its ten chapters: 1, How long will you live ?; 2, Physically fit; 3, Exercise, its benefits and its hazards; 4, Digestion and indigestion; 5, Food fads and fallacies; 6, Sleep; 7, Heart and blood vessels; High blood pressure, Bright's disease and Diabetes; 9, A sensible vacation program, and 10, Medicine in our changing World.

In the first moments spent in purusing the work, one will find that "since it is impossible for us to choose our parents, all that we can do toward the prolongation of life is to avoid preventable disease by the usual sanitary and hygenic precautions and by having physical examinations at least once a year to detect the presence of the diseases of middle life that come on insidiously."

One finds that "there is no royal road to health by means of any daily dozen, or any other exercise formula promoted by some former trainer of prize-fighters with the aid of good advertising agencies. There is much to be said of the game (golf) as to its health-giving qualities." But the good doctor warns one: "As with every other sport," he states, "it can not be played successfully when the player is fatigued either in mind or body. When we are very tired we become irritable and slightly unbalanced. When the golf player gets too tired 'he blows up'."

In another paragraph one notes that oarsmen, swimmers, and marathon runners are found to have hearts enlarged beyond the normal. Skiers and bicycle racers have hearts that are even larger. But those who follow the dignified, aesthetic—yet manly—art of fencing are assured, that on an average, fencers experience no apparent heart enlargement, following indulgent in their favorite indoor sports.

In the chapter on food fads and fallacies one finds: "The vegetarians who attach undue harm to the eating of meat base their conclusions on the fact that apes live on nuts, fruits and cereals. The monkeys have, however, other habits not quite appealing to home sapiens, or even as Mr. Mencken would say, to pithecanthropus erectus."

Thus does the author give his advice freely and in a way that is most interesting. The "five foot book shelf", containing a copy of "Why Men Fail," which was edited—incidently—by Dr. Fishbein, is quite bare without a copy of "An Hour on Health."

GRASSE MARKET FACTS

By O. C. Zilisch
Our Grasse Correspondent

(Drawn especially for Drug Markets)

Picking violets in the Grasse district

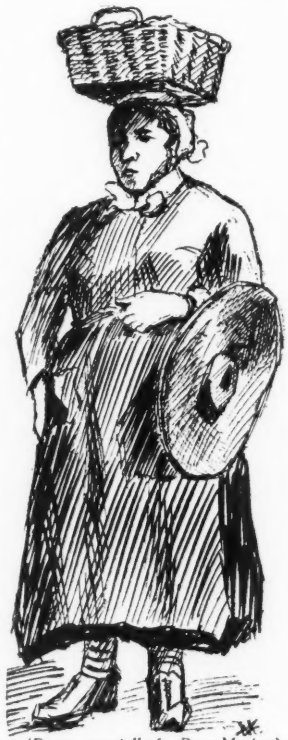
THE roses in the Grasse district, although some twenty days late in flowering, went way beyond everyone's expectations as to size of yield. In fact, this year's crop was practically double that of last year, the rose trees having been loaded down with buds, which, due to favorable weather conditions, developed normally and without any loss of flowers. The crop became so large at one time during the gathering that some of the distilling perfumers were not able to treat the stocks which poured into their plants until hours later. Last year the price paid the producers was four francs per kilo, delivered to the plant, whereas this year it was 5.35 francs per kilo, or approximately 16 cents last year, and 21½ cents this year, or about one-third more. This should mean, therefore, a corresponding rise in price for rose flower products. Due, however, to the fact that the yield was so abundant, the increase in price on such products will not be equal to the rise in price on the flowers this year. Some of the distilling perfumers report that stocks of pomades were practically non-existent when this year's yield was ready for treatment. The growers of the flowers are said to be satisfied with this year's price, and it is thought that the rise will stimulate them to greater effort with respect to the cultivation of the rose.

(Drawn from life especially for Drug Markets)

Typical flower gatherer from Grasse in native costume

Previous reports regarding the orange flower yield were entirely borne out by the results attained. In other words, the yield was less than ten per cent of the normal, or about 150,000 kilos. The price paid the growers of orange trees last year was 10.50 francs (42 cents) per kilo for orange blossoms, and this year 21.45 francs (about 85½ cents) per kilo delivered to the plant. This year's price is, therefore, double that of last year, which should bring a corresponding rise in price for orange flower oils and products. Because, however, of the smallness of the yield prices for these products have more than doubled. Stocks of neroli, in a good many instances, were entirely exhausted, and this year's output was in immediate demand on the ground, in order to enable some of the distillers to meet the requirements of their customers. Damage done to the trees by the cold is now thought to have been less serious than was at first reported. In fact, some of the trees which were considered dead have shown life, and it is the opinion of those watching their development that next year will see substantial recovery for this important culture, barring all bad weather conditions, of course.

This essential oil was comparatively scarce last year, with a consequent rise in price. Crop for this year, however, promises to be good, with the result that prices will, in all likelihood, move downward. In fact, this year's crop is about 15 days ahead of the normal time, which is August, and the yield will be ready for treatment during the last part of July.



(Drawn especially for Drug Markets)

On her way to the olive trees near Grasse

Development of this important flower is normal, despite the cold and snow of the first of the year, although certain plantations did suffer more than others. Whatever damage was done will, however, be compensated for by the new plants grafted this year. Jasmin gathering begins about the last of July, and, according to present indications, the yield for this year will be about normal, or in the neighborhood of 1,500,000 kilos. The price paid the producers last year was approximately 68 cents (17 francs) per kilo. Growers of jasmin feel that this year's price should be higher, for the reason that the cultivation of the jasmin requires special attention and care. The price has, however, at this writing not been fixed.

Among the flowers of secondary importance now being taken care of by the distilling perfumers are: the reseda, lime-tree, and broom, which are being treated in substantial quantities. Preparations are also being made to receive the tuberose, basil, mint, rose-geranium, etc. These last mentioned cultures have decreased in importance during the past few years, due to the fluctuations of the market prices and the inability to secure dependable labor.

Stabilization *of* Botanicals *and* Derived Products *by* Hydrocarbons

By Jonesco-Matiu and H. Vacovici*

University of Jassy, Roumania

Deterioration of certain botanicals as well as of the pharmaceuticals derived from them is a problem of long standing. The authors have experimented with common hydrocarbons on henbane and belladonna. Some interesting conclusions have been drawn.

CLASSIC researches, made by Bourquelot on the modifications that the active principles of plants, after being gathered, are subjected to, either in their original state or in the different pharmaceutical forms, such as tinctures and extracts, have given considerable publicity to the importance of the problem of the preservation of medicinal plants and the technical details which must be followed in the preparation and preservation of their pharmaceutical forms. It is known that vegetable organism, just like animal organism, is the locus of numerous physical-chemical transformations, not alone during the life of the plant, but also after its death. These transformations result in formation of active principles, contained in the cells, through decomposition. Bourquelot has explained all these transformations, particularly those which are concerned with glucosidal principles—which are themselves dependent upon hydrolytic processes—by assigning them to the oxidation and reduction phenomena caused by the diastase. The classical example cited by Bourlequot, namely the extracts of nux vomica, kola and Lactucarium, is indisputable proof of the original suggestions which were made by the Japanese Ioshida in 1883.

Other investigators, such as Bertrand, Perrot, Herissey, Bridel, Goris, Chodat, etc., have clearly subtantiated this point of view and this interpretation, in articles which appeared in the order of their names.

The conclusion has been drawn from all these investigations that the proper method to use in harvesting medicinal plants, in their preservation and the preparation of pharmaceutical products, is highly important from the standpoint of assuring their therapeutic value. It is true that at the present time the active principles of plants are tending to be used more in medicine in the place of the products which can be derived from them. It is, nevertheless, also true, according to Pouchet, that utilization of the active principles in the place of the products obtained from them is often only an apparent simplification, for it simply causes a modification or an attenuation of their physiological action.

All these investigators have proposed various processes, which have for their aim the preservation of the active principles in the medicinal plants and their pharmaceutical products, the principle of which is the destruction in the cells of the plant, immediately after harvesting, of the substances that bring about the transformations—that is of the diastases. Is not, moreover, the dessication of the medicinal plants an empiric means of preserving them, a method which has been known since antiquity ? The following may be cited as examples of the various processes which have been proposed for the preservation of medicinal plants and their pharmaceutical products.

The process developed by Bourquelot recommended that the plant should be immersed in 95% alcohol at the boiling temperature for ten minutes. A sort of stabilized extract is obtained in this manner, which has been called, "intracts."

*Translated from "Chimie et Industrie".

The process developed by Goris and Arnould employs steam as the stabilizing agent. The steam is used in an autoclave into which the various herbs are placed after having been cut into small pieces. Then the plants are heated to 105° to 110° C. for five to ten minutes. This process is particularly applicable to all the hard, tough parts of plants.

The process proposed by Perrot and Goris employs the vapors of alcohols in an autoclave into which the herbs are placed and heated to an interior temperature of 100° C. under a slight pressure. This process is particularly applicable to the treatment of tender parts of plants and herbs. The plant is itself obtained in a stabilized state by either of the two aforedescribed processes.

Anhydrous Ether Used

It is evident that in these three processes advantage is taken of the property of diastases in not being able to stand a temperature in excess of 100° C. All the experiments conducted along these lines by other investigators have substantiated the good results obtained by the aforementioned chemists. But it is also true that inasmuch as the stabilizing action also extended to the chlorophyll in the plants, pharmaceutical products obtained were more or less colored. These investigators have recommended that the stabilized plants and herbs should be extracted with anhydrous ether for the purpose of removing the excess chlorophyll. The same treatment is proposed for pharmaceutical products which have been derived from these plants, for this solvent will dissolve out the chlorophyll and leave the active principles untouched.

If it is true that principally the active principles of glucosidal character undergo modification under the action of diastases, it is also true that occasionally there are plants and herbs and pharmaceutical products of alkaloidal base, which also undergo modification and transformation, the mechanism of which is unknown. If there is, therefore, added together the but little encouraging opinion of several authorities on the one hand to the practical difficulties of preparing stabilized plants on the other, it is easy to see that this problem is far from being solved.

The authors have thought it interesting to take up again the study of the stabilizing medicinal herbs and plants and the pharmaceutical products obtained from them, for they had on the one hand the occasion to view the modifications of a chemical character to which several pharmaceutical products made from belladonna leaves and henbane leaves were subjected, and on the other hand the opportunity of experimenting with fresh plants. They had the following views in mind when undertaking these experiments.

In the first place they intended to extend his experiments likewise to plants, herbs and pharmaceutical products which do not contain glucosidal principles alone. In the second place, they desired to develop a more practical stabilizing process by employing reagents that were easier to handle. To that end a comparative study of the Perrot-Goris stabilization process and the process developed by the author was made. The morphological modification to which the plants were subjected and the chemical modifications, which took place in the pharmaceutical products prepared by the authors were studied at different intervals of time over an entire year.

In starting his practical observations in which the weak extracts were often contaminated with molds——and this applied even to those of alkaloidal character—the authors desired to assure themselves of the relation that can exist between the modifications of chemical diastastic character and those of a vital nature, in the pharmaceutical products, stabilized or not.

We have already shown that the basis of the processes, which have been recommended for the stabilization of herbs and plants, is the destruction of the diastases by means of heat, that is at an elevated temperature, with the aid of alcohol or water vapors. It may also be called to mind that in the effort of avoiding too high temperatures, attempts have also been made to effect stabilization by other chemical products, such as the vapors of ether, chloroform, etc. Results obtained from these experiments were more or less encouraging.

Practicability Factors

Practical applicability of the process depends upon a number of factors! It is necessary to use a chemical reagent which is cheap and easy to handle; the action of this reagent must be efficacious at moderately high temperatures. The idea occurred to the authors of attempting to stabilize these products by means of certain gaseous hydrocarbons and their halogenated derivatives. It was of course necessary to see whether or not these substances would meet the requirements of this process.

The following hydrocarbons were experimented with: Methane; acetylene and its halogenated derivatives; ethyl chloride; carbon tetrachloride. All these chemical reagents were used in vapor state, which vapor was made to impinge and pass through a mass of the herb cut up into small pieces. The temperature was maintained at points below 50° C. and a technic was followed out, which is described below.

In order to attain the sought end, it was first necessary to elucidate the following points. First, there was the influence which the chemical reagents exert upon the plants from the morphological point of view. Second, the influence of these reagents on the ferments of chemical nature contained in the plants. Third, the action of these chemical reagents on the active principles in the herbs and plants. Fourth, the effect of temperature on the plants and herbs stabilized by these processes. Fifth, the effect of temperature on the pharmaceutical products pre-

pared from these stabilized plants and herbs, and sixth and last, the perfection of the technical details to be applied in the researches.

Influence of Chemical Reagents on Plants

The plants that the authors decided to experiment with were digitalis, belladonna and henbane. These plants contain glucosidal and alkaloidal principles and are well known for the chemical modifications to which they are subject to after being gathered. But as experiments should have been carried out on the freshly gathered herbs, it was regrettable that fresh digitalis and henbane were not available at the time, but only fresh henbane leaves.

The following are the experimental results which were obtained from these investigations, to which should also be added the results obtained with pharmaceutical products prepared from these plants and others which had been gathered some time before they were used.

Morphological Modifications in the Freshly Gathered Henbane Leaves

The freshly gathered leaves of henbane wer subjected to the action of the following chemical reagents: —methane gas, acetylene gas and ethyl chloride vapors and carbon tetrachloride vapors, according to the method described below.

The following table gives the morphological modifications observed.

Morphological Modifications Undergone by Henbane Leaves under the Action of Stabilizing Agents

Stabilizing Agent	*Outward Appearance*	*Microscopic Appearance*
1. Leaves not stabilized.	Green color	Strong green color. Cellular content slightly shrunk.
2. Leaves stabilized by the Perrot-Goris method.	Deep green color. Tends to become rigid.	Deep green color. Cellular content slightly shrunk.
3. Leaves stabilized by methane and acetylene.	Grayish green color.	Cellular content much contracted.
4. Leaves stabilized by carbon tetrachloride and ethyl chloride.	Graying green color very friable.	Cellular content much contracted, and even lacerated.

The conclusion is reached from these experiments from the morphological viewpoint, the action of gaseous methane and acetylene is very slight on the cellular content of henbane leaves, while the action of the vapors of carbon tetrachloride and ethyl chloride is very distinct.

Action of Chemical Reagents on the Diastatic Fermentation Processes

A series of experiments were carried out according to the method devised by Bertrand with the view in mind of obtaining a basis for determining the inhibitory action of chemical reagents on the diastatic fermentation processes. Hydrolyzing diastases were selected for use in these experiments. Sucrase and emulsin were used and their very distinct action could be easily studied.

The action of each chemical reagent on the solutions of these diastases was accomplished by bubbling the latter for five minutes through the solution, and the progress of the reaction was controlled by analyzing the products, such as saccharose, amygdalin and arbutin. The experiments, which were carried out with the necessary control tests, showed that all the chemical reagents used exerted an inhibitory action of more or less potency on the diastatic fermentarion processes and that the action of acetylene gas was especially very marked.

Action of Chemical Reagents on the Active Principles

A very important question in these investigations is whether or not the constitution of the active principles of the plants and herbs is not affected by these chemical reagents. In order to make sure of what this action is, a solution of pure atropine in a one per cent. concentration was also treated in like manner. Analysis of the product before and after treatment showed that there was no appreciable modification, at least from the standpoint of the chemical characteristics of these products. The authors do not wish to make any definite statements on this matter and reserve for themselves the right to complete this study by carrying out physiological tests which are the only ones that are decisive in such experimental work.

It was now clear that the chemical reagents used by the authors in their experiments, exerted an inhibitory action on the diastastic fermentation processes. They now determined to carry out experiments to establish the time that was required for effecting this stabilization, and also the influence on pharmaceutical products which were prepared from these plants and herbs, either freshly gathered or from an old harvest, stabilized or not.

With this aim in view, the authors prepared, in accordance with the directions given in the Pharmacopoeia, tinctures and extractsof freshly gathered and stabilized henbane leaves and of belladonna leaves which had been gathered some time past and were not stabilized. The authors also endeavoured to make additional tests at the same time on the same plants which had first been stabilized by the Perrot-Goris process, that is by the use of alcohol vapors.

The results that were obtained in this series of tests are given on page 51.

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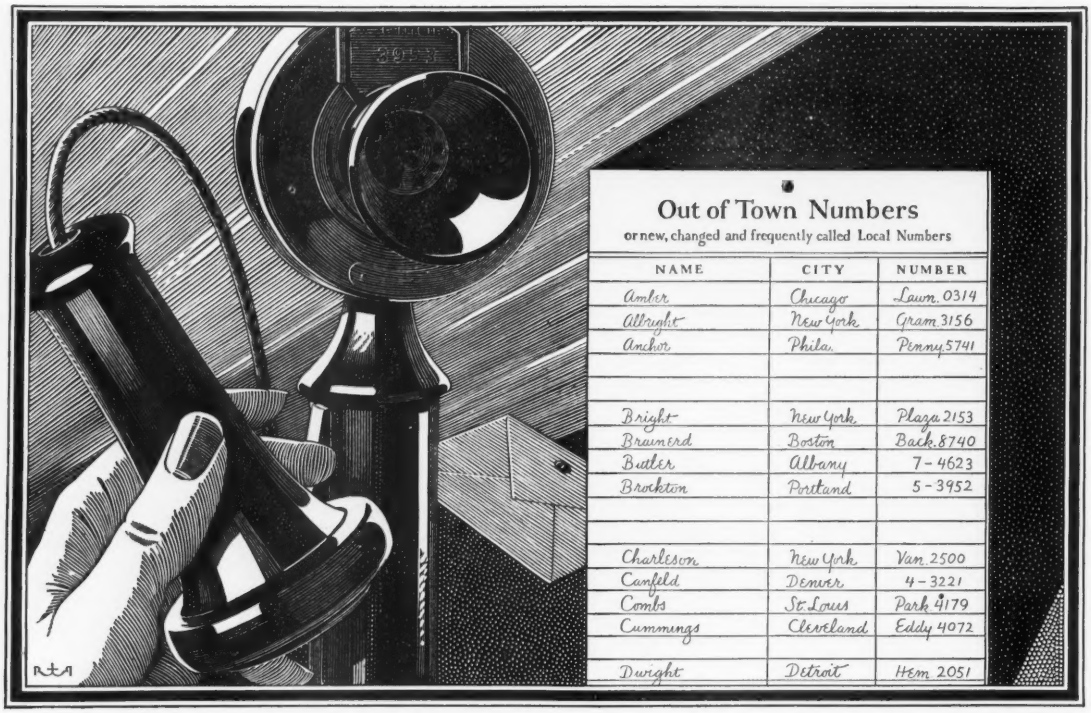
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ALKALOID FOUND IN PER CENT. -- HENBANE EXTRACT

Time of Determination	*Alcohol*	*Methane*		*Product Stabilized by Means of Acetylene*		*Carbon Tetrachloride*		C_2H_5Cl		*Not stabilized*
	5′	5′	10′	5′	10′	10′	10′	5′	10′	
After preparation	0.75	0.86	0.54	1.01	0.28	0.66	0.52	0.69	0.72	1.18
After 3 months	0.75	0.85	0.52	1.01	0.27	0.66	0.52	0.69	0.72	0.92
After 5 months	0.75	0.83	0.52	1.01	0.27	0.66	0.51	0.67	0.63	0.75
After 7 months	0.69	0.78	0.37	0.98	0.23	0.64	0.49	0.63	0.60	0.64
After 10 months	0.63	0.69	0.31	0.95	0.23	0.60	0.43	0.54	0.52	0.54
After 12 months	0.61	0.67	0.28	0.95	0.20	0.56	0.39	0.31	0.52	0.53

ALKALOID FOUND IN PER CENT.

Time of determination	*Commercial Belladonna Extract*	*Non-Stabilized Products Extract of Belladonna prepared by the Authors(1)* I	II	III	IV	*Extract of Henbane prepared by the Authors* I	II	III	IV
After preparation	2.78	3.44	3.44	3.44	3.44	2.08	2.08	2.08	2.08
After 1 month	2.78	3.38	2.92	3.32	3.38	2.08	1.96	2.05	2.02
After 4 months	2.76	3.38	2.92	3.32	3.38	2.03	1.96	2.04	2.02
After 7 months	2.47	3.15	2.51	2.57	3.21	1.96	1.61	1.90	1.65
After 10 months	2.45	2.92	2.28	2.48	2.89	1.79	1.47	1.70	1.76
After 12 months	2.38	2.90	2.08	2.39	2.39	1.73	1.33	1.70	1.76

1. (I) Kept in the laboratory out of contact with light.
II. Kept in the cellar.
III. Exposed to the action of light.
IV. Kept as comparative sample.

The great differences between the quantities of alkaloids found at the start of the experiments in the extracts of henbane, stabilized or not, the commercial variety or those prepared by the authors, may be explained just as satisfactory as being due to the different origins of these herbs, as to the difference in the amount of water that they contained. Inasmuch as the sole intention of the authors was to determine the influence of stabilizers and of time on the quantity of alkaloids contained in the plants and herbs, these differences have no effect on the final results obtained. The consideration holds good for the tinctures of belladonna and henbane prepared from the fresh plants or from the dried herbs, stabilized or not stabilized.

These tabulations clearly show that the active principles in the pharmaceutical products examined, extracts or tinctures, always undergo certain changes as they get older; whether or not they have been subjected to the action of chemical reagents; and that the loss of active principles is always greater in the non-stabilized products than in the stabilized. On the other hand, it may be stated particularly in the case of the tinctures, that a considerable loss of active principles is incurred—an unexpected phenomenon which can be explained only as being due to the decomposition of these active principles caused by hydrolysis. The loss of active principle value in the extracts is still more readily explicable in the case of the extracts by the appearance of molds, which was found to be particularly true of samples kept in a cellar. It is likewise verified that an appreciable loss of active principle is incurred if the action of the stabilizing agent is prolonged for more than five minutes.

It is interesting that traces of alkaloids have never been found in the precipitates deposited with time in the tinctures, but that it always has been possible to establish the presence of potassium with the aid of the picro-ethyl glycerin reagent. (See Bulletin *Societe Chimie Roumania*, 1921, 25).

In order to be convinced that the hydro-alcoholic medium and the time alone are responsible for this loss of active principle, the authors prepared pure solutions of alkaloids under the same conditions, these solutions having a concentration of the pure alkaloid corresponding closely to those existing in the

ALKALOIDS FOUND IN PER CENT. IN TINCTURES OF BELLADONNA AND HENBANE PREPARED FROM DRIED LEAVES AND IN THE NON-STABILIZED CONDITION

Date of Determination	*Tincture of Belladonna* I	II	III	IV	*Tincture of Henbane* I	II	III	IV
After preparation	0.037	0.037	0.037	0.037	0.085	0.085	0.085	0.085
After 1 month	*0.034*	*0.037*	*0.034*	*0.034*	*0.008*	*0.008*	*0.007*	*0.088*
After 4 months	0.028	0.031	0.028	0.028	0.057	0.008	0.005	0.007
After 7 months	*0.028*	*0.028*	*0.023*	*0.023*	*0.002*	*0.002*	*0.005*	*Trace*
After 10 months	0.027	0.027	0.021	0.021		Trace	Trace	
After 12 months	*0.023*	*0.020*	*0.017*	*0.017*		*Trace*	*Trace*	

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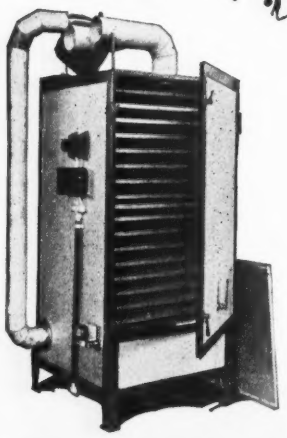

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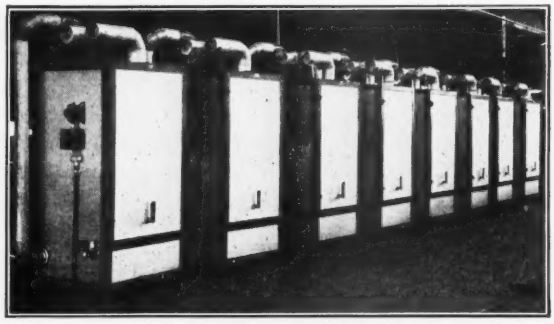

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tinctures, and these solutions were subjected to the same treatment.

The results obtained over one year are given in tabulations below. In order to observe the influence of chlorophyll on these alkaloidal solutions, another series of samples were prepared, to which 0.2 per cent. of chlorophyll was added, and these samples were then subjected to the same treatment as heretofore. The results obtained from these experiments were almost identical with those obtained in previous experiments.

ALKALOIDS FOUND IN PER CENT. IN TINCTURES OF HENBANE, PREPARED BY THE AUTHORS FROM FRESH AND STABILIZED LEAVES

		Products Stabilized by means of								
	Alcohol	*Methane*		*Acetylene*		*Carbon Tetrachloride*		*Ethyl Chloride*		*Non-*
Date of Determination	5′	5′	10′	5′	10′	5′	10	5′	10′	*Stabilized*
After preparation	0.052	0.034	0.033	0.054	0.031	0.041	0.026	0.043	0.046	0.006
After 3 months	0.052	0.034	0.028	0.054	0.028	0.041	0.028	0.034	0.043	0.052
After 5 months	0.052	0.031	0.026	0.052	0.028	0.040	0.024	0.027	0.004	0.049
After 7 months	0.046	0.028	0.018	0.052	0.024	0.036	0.020	0.026	0.031	0.040
After 10 months	0.046	0.017	0.017	0.044	0.020	0.024	0.011	0.008	0.020	0.023
After 12 months	0.040	0.015	0.017	0.040	0.018	0.023	0.010	0.008	0.020	0.020

CHEMICAL MODIFICATIONS UNDERGONE BY HYDRO-ALCOHOLIC SOLUTIONS OF PURE ALKALOIDS (ATROPINE AND HYOSCYAMINE) OVER ONE YEAR, KEPT UNDER THE SAME CONDITIONS AS EXTRACTS AND TINCTURES

Date of Determination	*Solution of Atropine in 70% Alcohol, concentration 0.75%*				*Solution of Hyoscyamine concentration 0.063%*			
	I	II	III	IV	I	II	III	IV
After preparation	0.075	0.075	0.075	0.075	0.063	0.063	0.063	0.063
After 1 month	0.075	0.072	0.073	0.073	0.060	0.062	0.063	0.063
After 4 months	0.075	0.072	0.073	0.073	0.060	0.062	0.063	0.063
After 10 months	0.069	0.070	0.069	0.073	0.058	0.060	0.063	0.063
After 12 months	0.065	0.067	0.067	0.066	0.063	0.057	0.060	0.060

The conclusion is reached from these investigations that the hydro-alcoholic medium and the time, as well as the presence of chlorophyll, cannot be the sole cause of an appreciable loss of alkaloids, no more than the physical agents, temperature, light of the sun. Also that there is a complex medium which exerts its influence in unknown ways.

Technical Details of Method Used in Research

In all these experiments, it was necessary on the one hand to treat the herbs and plants by the indicated chemical reagents, and on the other hand to carry out a number of alkaloidal determinations. In order to effect stabilization of the plants by the Perrot-Goris process, in which alcohol vapor is used, the authors followed the method described by these investigators. Hence, the henbane leaves were subjected to the action of alcohol vapor in an autoclave for a period of five minutes at the atmospheric pressure. The leaves were then dried at a temperature of 40° C.

The following method was used in treating plants and herbs by chemical reagents under the desired conditions, that is by using gaseous substances and temperatures lower than 50° C. When methane gas was used, one hundred grams of sodium acetate and 150 grams of soda-lime were placed in a retort and heated on a sand bath. The retort was connected by means of a rubber tube and a glass tube to a glass flask containing five liters and well closed by means of an asbestos cap. The glass tube penetrates to the bottom of the flask which is furnished with another glass tube for the escape of the gas. About two kilograms of the fresh herb is placed in layers in this flask. The retort as well as the flask are placed upon suitable supports so that they can be heated if desired. The flask is generally heated up to a temperature lower than 50° C. except in the experiment where carbon tetrachloride was used, in which case the temperature required was about 77° C. The leaves are well impregnated with gaseous methane for the desired time and then the leaves are allowed to dry in air .

The same arrangement is employed when acetylene is used, but the retort is replaced with an acetylene gas generator, in which calcium carbide is used.

Commercial Kelene tubes are used with ethyl chloride.

(Continued on page 97)

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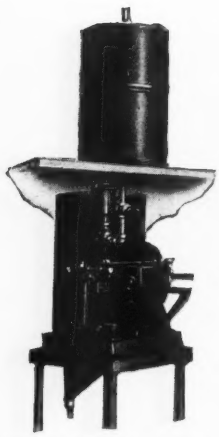

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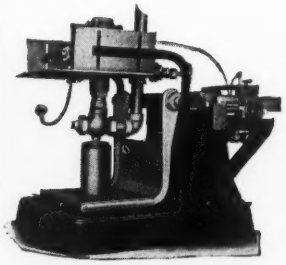

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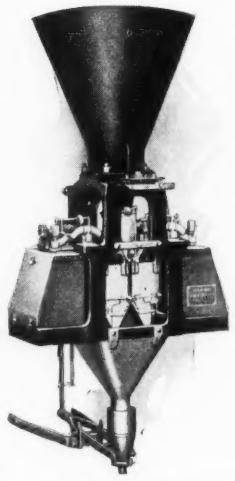

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Patents Issued

BRITISH PATENTS

Hormones

Active substances are obtained from the fresh or dried hypophysis or from its separate lobes by hydrolysis by means of an alkali or an acid, conditions as to time and temperature being controlled so as to avoid decomposition of the active substances. Albumin degradation products are precipitated by neutralizing the hydrolyzing agent or adjusting the hydrogen ion concentration of the solution. The active substances may be treated with an organic solvent for further purification. Thus fresh gland is ground in water, hydrochloric acid gas is passed for thirty minutes at 15 degrees C, and the mass centrifuged. These operations are repeated, and the combined liquids are neutralized with strong caustic soda solution and centrifuged and, if desired, further purified by treatment with acetone. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. British Patent No. 305,475, filed Feb. 4, 1929.

Perfume Preparations

A process for improving substances used in making perfumes consists in subjecting them to a partial hydrogenation whereby impurities are hydrogenated in preference to the substances themselves, subsidiary odors being destroyed. Bases for these perfumes include resins, balsams, essential oils or constituents, as well as synthetic products resembling the natural odors, such as ionone and methyl ionone. The hydrogenation may be produced in known manner by the action of hydrogen in presence of a nickel catalyst or by the action of sodium ethylate, aluminum amalgam, zinc dust or the like. The proportion of hydrogen or other reducting agent is generally so selected that hydrogenation ceases when the subsidiary odor due to the impurities has been removed but hydrogenation of a fraction of the substance itself is not disadvantageous. I. G. Farbenisdustrie A. G., Frankfort-on-Main, Germany. British Patent No 305,555, filed Oct. 29, 1927.

Phenoxyquinoline Carboxylic Acids and Esters

These synthetic drugs are prepared by condensing a quinoline compound containing a replaceable halogen atom with an aromatic hydroxycarboxylic acid or ester. In the case of the ester, the product may be saponified. The condensation is preferably effected in a solvent or diluent. The products are of therapeutic application. According to the example, 2-chloroquinaldine is heated with parahydroxybenzoic acid methyl ester in nitrobenzene solution. On boiling the product with caustic soda and acidifying 4-methyl-2-phenoxyquinline-4'-carboxylic separates out. I. G. Farbenindustries A. G., Frankfort-on-Main, Germany. British Patent No. 305,589, filed Feb. 6, 1929.

Bornyl and Isobornyl Acetates

These acetate are produced from pinene by heating to boiling with a mixture of three molecular proportions of acetic anhydride and one molecular proportion of boric acid, sufficient in quantity to esterify the transformed oil. The newly formed acetic acid is esterified by the transformed pinene to give bornyl and isobornyl acetates, the acetoboric anhydride acting as a condensing agent. Alternatively a quantity of the anhydride-boric acid mixture insufficient to completely esterify the oil is employed, and, after the actic acid formed has been esterified, glacial acetic acid sufficient in amount to esterify the excess oil is added. L. Schmidt, Hamburg, Germany. British Patent No. 306,385, filed Aug. 10, 1928,

Bornyl Esters

Bornyl and isobornyl esters are obtained in better yield by an improvement of the known process of heating pinene with organic acids in the presence of boron trioxide or mixed anhydrides of boric acid. Such improvement consists in removing the boron compounds from the mixture when the ester content of the oil is constant, and adding small quantities of an organic or inorganic acid as catalyst. Further heating under ordinary pressure and at relative low temperatures results in an ester content increased by 15 to 20 per cent. Suitable catalysts men tioned are anhydrous oxalic acid, benzene sulphonic and toluene sulphonic acids, phosphoric, nitric, sulphuric and hydrochloric acids. L. Schmidt, Hamburg, Germany. British Patent No. 306,387, filed Aug. 13, 1928.

2-Mercapto Thiazoles

2-Mercapto-thiazoles are prepared by heating ortho-nitrochlorobenzene or a hgmologue, analogue, or substitution product with an alkali hydrosulphide, ammonium hydrosulphide, or an alkaline earth hydrosuplhide, cooling, adding carbon disulphide and reheating the mixture. The hydrosulphide may be employed admixed with the corresponding sulphide. The process is carried out in the presence of water, or an indifferent solvent such as alcohol, or a mixture of these, and yields are almost quantitative. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. British Patent No. 306,492, filed Feb. 21, 1929.

Hormones

Hormones influencing the action of the heart are obtained from the hearts of warm-blooded animals by treatment with organic solvents which are insoluble in water. Fresh hearts may be treated so that the water soluble active substance is obtained in the aqueous layer arising from the natural moisture of the tissue, or dried hearts may be treated with the solvent in the presence of water, or may be treated first with the solvent to remove lipoids and then with water to obtain the active substance. The extractions are made under neutral or slightly alkaline conditions, and the extracts are treated to remove ballast substances, such as albumens and lipoids. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. British Patent No. 306,606, filed Oct. 17, 1927.

2-Mercaptoarylenethiazoles

These compounds are prepared by acting on an ortho-aminoaryl sulphocyanogen compound with an alkali and a thiocarbonate. Mixtures of substances which would produce thiocarbonates may be used in place of the salts themselves, such as carbon disulphide and alkali sulphide, carbon disulphide and alkali, or carbon disulphide, alkali and alcohol. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. British Patent No. 306,842, filed Feb. 25, 1929.

Vanadium Derivatives of Aromatic Arsenic Compounds

These derivatives, made from arsenic compounds containing hydrozyl or amino groups, are prepared by interaction of the arsenic compounds with vanadium compounds, and its products then reduced if desired. Various examples are cited. J. Schumacher, Berlin, Germany. British Patent No. 306,847, filed Feb. 25, 1929.

Vitamins

Vitamin A is extracted from suitable materials, such as egg yolk, cod liver oil, tomato, spinach and green algae, by removing cholesterol and the like from the unsaponifiable portion, and precipitating the vitamins as a choleic acid from which the free vitamin may be obtained. Thus, cod liver oil is saponified with alcoholic potassium hydroxide and alcoholic solution of an alkaline earth salt such as calcium chloride is added, the precipitated alkaline earth soaps being removed. The filtrate is treated with an acid such as carbonate acid to convert any free inorganic base into insoluble salts such as carbonates, or bicarbonates, which are removed. The alcohol is then evaporated and the residue dissolved in a solvent immiscible with water such as acetic ester, benzine, or ether. The solution is washed with soda, trosodium phosphate, etc. to remove acids, then with water or dilute acids, such as hydrochloric or sulphuric acid, and is then evaporated to remove the solvent. The oily, partly crystalline residue is dissolved in a small quantity of an organic solvent such as methyl or ethyl alcohol, acetone, or ethyl acetate and cooled to crystallize out the cholesterol. Further evaporation, and solution with addition of desoxycholic acid results in the formation of choleic acid, which is separated, crystallized and then converted into the free vitamin. T. Shimizu, Yobancho, Okayama, Japan. British Patent No. 306,881, filed Feb. 18, 1929.

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Naturally, you know,

But what does it mean in connection with **Petrolatum Liquidum U. S. P., a Medicinal White Mineral Oil ?**

Medicinal White Mineral Oils were originally produced only from Russian Crude Oil. As usual with oils made of the same crude, the higher the Viscosity, then the higher will be the Specific Gravity. Therefore, formerly it was sufficient to classify and sell Medicinal White Mineral Oils on the basis of the Specific Gravity; and of two such oils, the one with the highest Specific Gravity was the better, provided both oils were equally pure. This method, however, does not hold good when comparing oils of different origin, as then the Specific Gravity figure, as a valuation of the oil as a lubricant for either internal or external purposes, ceases to apply; at least such comparisons are likely to lead to serious mistakes.

ALBINOL, Genuine Russian White Medicinal Oil (Petrolatum Liquidum U. S. P.) refined from Russian Oil has a Saybolt Viscosity of about 325″ at 100°F and a Specific Gravity of about .885. White Medicinal Oils of different origin have, for example, a Specific Gravity of .890 and higher, but a Saybolt Viscosity of only 300″ or less at 100°F. It therefore results that if a different base crude oil is used for the manufacture of Petrolatum Liquidum U. S. P., it is incorrect to judge the value of an oil by the Specific Gravity. It is the **Viscosity** which determines the value of a lubricant; therefore the basis **must** be the Viscosity, and the oil with the highest Viscosity is the most valuable.

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REFINERY IN HAMBURG, GERMANY

Hormones of Sexual Organs

These are obtained in water soluble form by treatment with an aqueous solution of a weak acid such as lactic acid, tartaric acid, etc. in stead of being treated with an alkaline earth. The hormone goes into solution leaving the ballast materials undissolved. Such water soluble products can be obtained from placenta, ovaries, testicles and the like. Schering-Kahlbaum A. G., Berlin, Germany. British Patent No. 307,054, filed Jan. 25, 1929.

GERMAN PATENTS

Stabilizing Solid Alcoholic Iodine Solutions

Substances are added to one or more components of the mixture, which substances form meta-stable compounds with iodine, such as complex compounds or compounds from which the iodine is easily split off. Dr. K. Jungmann, Aussig, a. E., and Dr. O. Kolbert, Nestomitz a. E., Czecho-slovakia. German Patent No. 468,710, filed Sept. 22, 1926.

Disinfectant for Foot and Mouth Disease

This disinfectant consists of an aqueous solution of sugar of lead and litharge, possessing a specific gravity of 1.24 with the addition of an aqueous solution of alum and in certain instances of boric acid. Adde von der Wal, Hoogeveen, Holland. German Patent No. 468,579, filed Feb. 25, 1925.

Complex Silver Cyanide Preparations

Silver cyanide in the form of ammonium silver cyanide, alkali silver cyanide or alkaline earths silver cyanides and cholic acid salts. Such as ammonium cholate, alkali cholates, alkaline earth cholates or magnesium cholate are allowed to react with one another in the presence of solvents. The double salts, which are formed, for example by careful evaporation of the solution or by precipitation, for example by the addition of organic liquids, such as acetone, ether, etc., are obtained ready for use. The various components can also be made to react in the molten state. C. H. Boehringer Sohn, Nieder Ingelheim, am Rhein, Germany. German Patent No. 468,808, filed Feb. 14, 1925.

Derivatives of 2-Phenylquinolin-4-Carboxylic Acid

These derivatives are made by converting the acid in the usual manner into the cadmium salt. J. D. Riedel-E. de Haen A. G., Berlin-Britz, Germany. German Patent No. 468,809, filed July 3, 1926.

Hormone-Containing Substance of Vegetable Origin

The germs from grain which has not been germinated are treated with concentrated sulphuric acid in the presence of catalyts and the product obtained is finally subjected to the action of chlorinating agents. Aktienfabrik zur Erzeugung von Chemikalien in Kolin, Kolin, Czecho-slovakia. German patent No. 468,810, filed July 31, 1925.

Aminoarylarsinic Acids and Derivatives

These pharmaceutical products are manufactured by treating the corresponding nitroarylarsinic acids with iron in hydrochloric acid solution. Les Etablissements Poulenc Freres, Paris, France. German Patent No. 468,757, filed Oct. 22, 1927.

Iodine-Containing Oils

Stable iodine-containing oils, with a high iodine number, are obtained by allowing iodine or iodine compounds to act upon the unsaturated oils, the iodine compounds being used in amount theoretically sufficient for saturation. The loosely-combined iodine can be split off and removed from the raw product. E. Merck, Darmstadt, Germany. German Patent No. 469,233, filed April 4, 1926.

Maleic and Succinic Acids from Furfurol

These acids are obtained by the oxidation of furfurol which is dissolved in acids or salt solutions or dispersed therein and then electrolyzed. Lead electrodes are used. Lead superoxide anode and a mead cathode are used for the production of maleic acid. Zaidan Hojin Rikagaku Kenkyujo, Tokyo, Japan. German Patent No. 469,234, filed May 18, 1926.

Organic Antimony Compounds

Mixed aliphatic-aromatic antimony compounds, which contain carboxyl groups in non-cyclic linkage, are made to react with hydrazin or its derivatives, particularly semicarbazides, or with other reactive amino compounds. Dr. A. Albert, Muenchen, Germany. German Patent No. 469,328, filed Jan. 13, 1923.

Alkali Salts of Substituted Barbituric Acids

Such salts are obtained in stable solution by adding to such solution during their preparation or after such substances as gelatin, decomposition products with gelatinizing properties, agar-agar, etc. J. D. Riedel A. G.-E.de Haen A. G. Berlin-Britz, Germany. German Patent No. 469,395, filed Jan. 16, 1926.

No Change in Policy

Dr. J. J. Durrett, Chief of Drug Control, in the Food, Drug and Insecticide Administration, states to the correspondent of DRUG MARKETS that there has been no change in the policy of the Administration as regards the labeling of antiseptics and the requirements relative to such products, during the past four or five years. The doctor declares that the Department is standing where it has for a long time, upon a definition of policy under date of June 18, 1928, which was in part as follows: "Current dictionaries give two meanings for the word "antiseptic." According to these authorities an antiseptic may either kill bacteria or prevent their growth. Products such as salves, ointments, and dressings, which remain in contact with the body for long periods of time, may properly be designated as antiseptics if they inhibit the growth of bacteria. On the other hand, mouth washes, douches, gargles, and preparations of like nature, which are in contact with the body for but brief periods of time, and because of this can not exert any inhibitory action, may properly be described as antiseptics only if they will destroy bacteria under the conditions of use, that is, in the dilutions recommended, and in a period of time comparable to that in which they would have an opportunity to act when used as directed."

Dr. Durrett reports that the campaign against "flu" remedies is nearly cleaned up and that satisfactory progress is being made this summer in carrying on the Administration's project involving so-called malaria cures. Tuberculosis "cures" have practically been eliminated from the market, according to announcement of the Food, Drug and Insecticide Administration. Another announcement says that the work of eradicating rheumatism "cures" will continue, although legal action has been taken against 245 of these preparations.

In trade circles it is reported that the Food, Drug and Insecticide Administration is making a special drive on veterinary drug products. Official announcement has been made that worm expellers for use in treating livestock and poultry must be properly labeled. Dr. Henry Moskey, specialist on veterinary products coming under the Drug Control office, and who has been engaged in this line of work there and before that in the Bureau of Animal Industry, Department of Agriculture, for a number of years, is the subject of criticism in some quarters.

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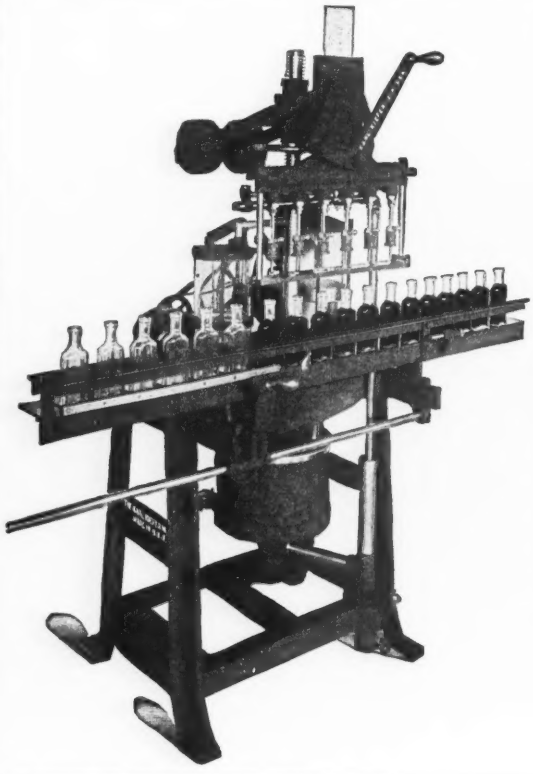

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News of the Drug Industries

Origin of Menthol Duty Increase a Mystery

Nobody Appears to Want Additional Duty—Drug Manufacturers Concentrate in Effort to Block it—Transfer of Prohibition Enforcement to Department of Justice Loses Friends.

Washington—Tariff legislation and prohibition reorganization are leading topics in drug trade circles at the National Capital. One of the curiosities of the tariff bill was the increase from 50 cents to 75 cents per pound in the duty on menthol, as the measure was sent over from the House to the Senate. At the latter end of the Capitol drug and proprietary manufacturing interests such as the Vick Chemical Co., Mentholatum Co., Parke, Davis & Co., concentrated in an attack on the menthol schedule.

It is reported that domestic producers of menthol and large consumers of the product are a unit in opposition to the proposed increase of duty. The consumers naturally oppose the duty as tending to increase prices. The producers, according to information here, realize that American-grown peppermint does not produce menthol comparable to Japanese menthol. American producers of synthetic menthol, it is said, have taken no part in the agitation over the proposed menthol increase.

There is an interesting story going the rounds of the drug trade of the "how come" of the House increase on menthol. According to this story, Representative Hickey of New York appeared before the House Committee on Ways and Means and filed a statement asking that the duty on peppermint oil be increased. Later, on the same day, it is said, Mr. Hickey returned to the Ways and Means Committee room and told committeemen or attaches personally that he had made a mistake; that what he had intended to do was to request an increase in the duty on menthol. In due time the committee recommended an increase on menthol, which was adopted by the House. Now it appears that nobody wants this increase.

Congress went into its summer recess without having acted upon President Hoover's suggestion that a joint committee of both houses of Congress be appointed to act in connection with an interdepartmental committee from the executive branch of the government in studying certain angles of the prohibition enforcement and reorganization problem, particularly in connection with possible transfer of enforcement activities from the Treasury Department to the Department of Justice.

Senator Jones of Washington introduced a measure to carry out the President's idea, so far as a joint congressional committee is concerned, which was taken up by the Senate, but not acted upon by that body. Mr. Jones says that the matter will be disposed of after the conclusion of the recess. Meanwhile, he has asked the President to name the interdepartmental committee to conduct a survey with a view to co-operation with the congressional committee later on.

It appears that the President is not so sure about the desirability of prohibition transfer to the Department of Justice as he once was. Drug trade representatives doubt that more than a partial transfer will ever be brought about. The question is reported to have been taken under consideration by the President's Law Enforcement Commission.

Trade interests believe that the President will seek to advance the cause of prohibition by methods other than enforcement, pure and simple. They point to recent announcements that the British and American ambassadors, respectively, to Washington and London, will serve no more liquors, the President's appeal to citizens of border communities to observe the law, and like steps, in support of their point.

Foreign Perfume Valuation Established

A decision in the United States Customs Court in the case of William McKinney (Richard Hudnut) vs. the United States, involving the valuation of alcoholic perfumery from France, affirms the invoice values of the merchandise in question and supports the importers' views that there was a foreign market value for the goods at the time of exportation. The decision in part reads: "The importer offered an affidavit, with a number of invoices attached, for the purpose of establishing that there was in France, at the time these exportations were made, a foreign market value for the merchandise. The government objected to this affidavit being received in evidence on the same grounds as were stated when similar affidavits were offered in reappraisement Nos. 86123-A and 87446-A, which in substance were that the Republic of France had excluded representatives of the Treasury Department from France, and therefore no such affidavits could be received.

"I adhere to my former ruling that the said representatives of the Treasury Department were not forcibly removed from France, but were withdrawn by the United States Government at the request of the Republic of France. There is no basis for the appraiser's action in finding United States value in the face of this uncontradicted affidavit (Exhibit 1), which proves the contrary. "The invoice values are sustained."

Weiss Sues A. D. S.

Samuel L. Weiss files breach of contract suit for $202,361 in the Supreme Court of New York County against the American Druggists Syndicate, Inc., the Saks Stamping Co., the hospital enamelware subsidiary of the syndicate, and the Vadsco Sales Corp. Mr. Weiss was former manager of the stamping company.

Weiss's contract with the stamping company was made in 1925 and according to the complaint he was to receive 50 per cent of the profits for managing the business and the contract was renewable so long as the profits remained above $10,000 annually. Since the drug syndicate took over the stamping company, attorneys for Mr. Weiss contend, the contract has been vitiated and set aside.

R. B. Stoddard has severed his connection with Ungerer & Co., New York, and will become associated July 1, with Van Ameringen-Haebler, Inc., in the position of head of the Department of Essential Oils and Flower Oils.

Mr. C. B. McDow has joined Phoenix Hermetic Company as Philadelphia representative, replacing Mr. M. U. Ramsburg, recently resigned.

Down in Baltimore

THE Emerson Drug Company said "good-bye" to their sealing problems long ago when they decided to top off Bromo-Seltzer and their Aperio with the Duplex Seal.

Now, with its adoption for the smallest size Bromo-Seltzer, Duplex becomes "standard equipment" on the entire line of Emerson Drug products.

Down in Baltimore they know that the Duplex Seal builds good-will. It's so convenient—just a quarter turn of the wrist and presto, the bottle is unsealed. Just a quarter turn of the wrist and it's re-sealed to keep the merchandise air-tight. No matter how many times a bottle sealed with a Duplex is opened and then re-sealed, the product keeps its original quality until it's all used up.

Moreover, in shipment no amount of rough treatment makes the Duplex Seal "creep" or work loose. It stays firm always to protect the product it seals. There's no other seal like the Duplex Seal!

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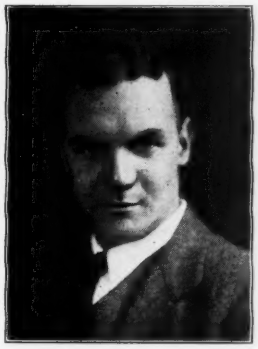
Department Acts on Rheumatism Cures

Although legal action has been taken against as many as 245 so-called "rheumatism cures" by the Food, Drug, and Insecticide Administration since the Federal food and drugs act was made effective in 1907, fraudulent and misrepresented preparations are still being sold to "cure rheumatism." Both in number of preparations and in number of notices of judgment, the "rheumatism cures" lead the list of drug preparations proceeded against by the Federal authorities.

Public misunderstanding of the word "rheumatism" is largely responsible for the great sales of these "cures", as "Rheumatism" is commonly believed to be any pain in and around the bones, whereas these pains may spring from a multitude of ailments too loosely grouped to be treated by any single drug or combination of drugs.

One purpose of the food and drugs act is to protect the American public by the removal from interstate drug trade of so-called "cures". The work of removing all false, fraudulent, misrepresented and useless "rheumatism cures" from legitimate drug trade will be continued, say the officials.



Rupert C. Watson, the new advertising manager and publicity director of Ungerer & Co., New York, was formerly a member of the editorial staff of DRUG MARKETS. For a year he was managing editor of "Chemical Markets," and for the past six months he has been assistant editor of the "Oil, Paint & Drug Reporter." Mr. Watson is very well known throughout the drug and chemical trades.

Odell Fails to Cancel Trade Mark

The petition by the Odell Co. for cancellation of the registrant's mark "Venezia's Beauty" granted to the registrant John Venezia, November 16, 1926, was denied. Grounds for cancellation by the petitioner was based on prior adoption and use of the mark "American Beauty", for the use upon the same class of goods, namely, hair tonic.

The text, in part, of the opinion of First Assistant Commissioner Kinnan states that, "It must be deemed established that the petitioner when it entered the field was not the first to use this word "beauty" upon hair tonic and is not entitled to any exclusive rights in such term. The other portion of the registrant's mark is wholly disimilar from that of the petitioner. Neither party is entitled to any exclusive rights in the only part of the marks which is common, the word "beauty."

"The decision of the examiner of trade mark interferences dismissing the petition and recommending the registration of respondent's mark be not cancelled is affirmed."

The Federal Trade Commission has entered a complaint against the Fayro Laboratories, Inc., a Delaware corporation, doing business at Pittsburgh and engaged in the manufacture, advertising and selling of Fayro, an alleged cure for obesity.

Among other charges the commission states, "Fayro is an unsafe, unscientific, ineffective and undependable nostrum and will not remove fat or flesh from the human body."

Dr. J. J. Durrett, Chief of Drug Control, has returned from a 3,000 mile vacation motor trip to his native Southland, which greatly refreshed him for renewed efforts towards purity of drugs.

Chicago Happenings

The Annual Stag Picnic of the Chicago Perfumery, Soap and Extract Association was held at the White House on Wednesday, June 19th. Most of the forty-four members and guests who were present spent a lively afternoon mainly running after, but occasionally catching baseballs, pitching quoits, climbing trees and playing leap frog. The others, who were not so energetic, found more sedate indulgence in table talk, bridge, sun baths, and possibly cross-word puzzles. The wooden bowl emblematic of the Baseball Championship was won by the team captained by Donald M. Clark, of France American Hygienic Co. The losing players, under the leadership of L. A. Solo, of Primrose Laboratories, displayed fine sportsmanship and congratulated their victors for the successful preliminary negotiations they had made with Chris Christensen, the battle-scarred umpire, who, in a formal acknowledgment, announced that the occasion had afforded him a most refreshing siesta. President A. G. Schneider exposed a roll of motion picture film during the afternoon, but whether he aimed the machine correctly remains to be seen at one of the regular Fall meetings, when the reel will be projected. At the dinner, which closed the affair, a rising vote of thanks was taken for Harold E. Lancaster, Chairman of the Entertainment Committee. Mr. Lancaster and his co-workers, Frank T. Robinson, George Woods, A. J. Dedrick, and J. W. Bicks, succeeded drawing twice the number that attended last year's picnic.

The Chicago Drug and Chemical Association's first Golf Tournament of 1929 was held at Cog Hill on June 27th. Over thirty members teed off and the Tournament Prize was won by Harry Larson, of G. M. Van Kirk and Associates. The President's Prize, a special bequest by O. N. Davis, was carried off by Harry Elwell, of Pennyslvania Oil Co., and the Guest Prize was presented to Dick Oliver, of Foree Products Co. The Committee, consisting of A. C. Drury, Dudley F. Lum, and H. E. Lancaster, announces that the next tournament will take place late in July.

Ulcicur Co. has been established at 184 West Washington st. with a capitalization of $25,000, for the manufacture and distribution of medicinal and chemical preparations and other products. The incorporators were Marcus Looney, William K. Bermele and J. T. Sheridan.

Midway Chemical Co., 1444 West 37th st., has placed on the market an item that appears unique. It is a moth compound moulded in the shape of a moth and known as "Ridz." Large distribution is expected at a retail price of 10 cents.

The Price-Hannah Co., has been appointed to handle the advertising account of the Odor-Nox Chemical Co., deodorant manufacturers. Newspapers will be among the mediums used.

The Odol Company of America has been incorporated and established at 8 South Michigan ave. for the manufacture and distribution of dentifrices, toilet preparations, etc.

Crown Chemical Co., Ltd., has been established at 200 North Jefferson st., with a capitalization of $3,000. Chemicals, supplies and kindred articles will be merchandised.

Honex Corporation of America recently began the manufacture and distribution of shaving creams, lotions and kindred items at 208 N. Wells st.

Benedict Laboratories, Inc., 35 North Clark st., has changed its name to Illinois Chemical Laboratories, Inc.

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But there are three things that come before the planning of an advertising campaign for *Yourr* Chemical Corporation: *Quality raw materials, skilled preparation; attractive, dependable and convenient packages.*

No product can succeed for long that is not made of quality materials and skilfully prepared.

No package can win out in the competition which it is to meet unless it attracts attention on the dealer's shelves, delivers product with quality and flavor intact, and is easy for the consumer to open.

And, no advertising, no matter how well planned or cleverly executed, can hope to make up for these deficiencies in product and package.

PHOENIX
Metal Caps

THE CAPITOL CAP is a scientifically correct and commercially practical closure for sealing pharmaceuticals, proprietaries, toilet preparations and chemical products in glass packages.

It consists of a metal shell of dependable continuous thread construction which is fitted with liners tested to seal various types of products.

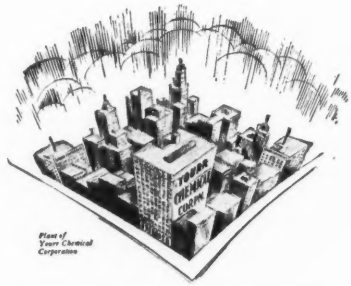
Furnished flat top, domed, embossed or decorated in solid colors, translucent lacquers and lithograph designs to harmonize with your labels and cartons.

Applied by hand or machine. Numerous practical machines are available.

A common-sense closure for the products of progressive manufacturers and merchandisers.

PHOENIX-HERMETIC COMPANY
Metal Caps for Glass Packages
CHICAGO NEW YORK

Offices: Rochester, Philadelphia, Boston, San Francisco, Los Angeles, Cleveland, Cincinnati, St. Louis
Offices and Plants: 2444 W. Sixteenth St., Chicago, Ill.; 14th Ave. and 38th St., Brooklyn, N. Y.



**Yourr* Chemical Corporation is purely a creation of the imagination. Its buying, manufacturing and sales problems, however, are very likely to be similar to the problems of *your* chemical corporation.

Articles about *Yourr* Chemical Corporation will appear each month in this publication. If you have missed any of the previous articles in this series, we will supply reprints together with a booklet describing the plan and purpose of this hypothetical organization.

Write the Promotion Department of Phoenix-Hermetic Co The address is 2444 W. Sixteenth St., Chicago.

Lambert to Acquire New Unit

Lambert Co. is expected shortly to announce the acquisition of a manufacturing company in the drug business, extending its holding company operations. The Lambert Co. at present own about 95.8% of the stock of the Lambert Pharmacal Co. and all the stock of Lambert & Feasley, an advertising agency which advertises Listerine

At present all of the earnings of both companies are derived from the sale of listerine and allied products. The acquisition of another company marketing its products under a name other than that which has contributed so much to Lambert would serve to strengthen the earnings position of the holding company.

Stockholders of Lambert Co. approved an increase in the number of authorized shares this spring to 2,500,000 from 1,000,000. Even though a substantial part of this new stock is used to acquire new companies, there would still be a large amount of stock unissued, and Lambert is expected later in the summer to split the present shares.

A record net profit approaching $6. a share is expected as net profit for the first three months was $2,238,298, or $3.20 a share on the 698,996 shares now outstanding, against $1,182,292, or $2.45 a share on the 481,250 shares outstanding at the end of the first quarter in 1928

Owens-Illinois Glass Co. announce the appointment of Howard L. Murray as advertising manager. Mr. Murray has had 2 yrs. of advertising with The Owens Bottle Co. and four years of merchandising with one of the country's largest shoe manufacturers. His is an unusual opportunity and one which is being met with commensurate ability and success.

Much of Mr. Murray's time and effort will be devoted to advertising and sales promotion in the drug field.

Dr. E. H. Squibb Dies

Dr. Edward Hamilton Squibb, of 184 Columbia Heights, Brooklyn, retired physician and former president of E. R. Squibb & Son, manufacturing chemists, died of heart disease at his summer home here to-day at the age of 77. Funeral services will be held in Holy Trinity Church, Brooklyn, Wednesday morning.

Dr. Squibb was born in Brooklyn a son of the late Edward Robinson Squibb, who founded the business of E. R. Squibb & Son. Three years after graduating from Harvard in 1878 he received his medical degree from the College of Physicians and Surgeons in this city.

Since his retirement from the presidency of Squibb & Son some years ago he had continued on the board of directors.

Ungerer & Co., New York, has appointed the Harper-Mantle Co., Toronto, Canada, as Canadian representative, succeeding the late R. S. McIndoe, recently deceased.

Harper-Mantle Co. has been organized by E. J. Harper and W. F. Mantle, associated with R. S. McIndoe for twelve years as office and sales manager respectively.

Albert Viault, of the Division of Foreign Tariffs, Bureau of Foreign and Domestic Commerce, Department of Commerce, becomes foreign trade adviser, of the proprietary Association, beginning July 1, with offices in the Evening Stra Building, Washington, D. C.

Drug Trade Stocks Gain

Standard Statistics Co. Index of prices of common stocks of corporations in the drugs, cosmetics and allied fields has shown a steady gain from the low point for 1929 registered May 29 and the drug index stands far above the index for all industrial stocks. A comparison of the drug stock index with that for all industrials follows for recent weeks:—

	Drugs	*All Industrials*
June 13	221.8	188.8
June 20	226.7	191.5
June 27	228.2	194.5
July 3	229.5	201.4
1929 High	260.6	201.4
Low	220.2	182.4
1928 High	264.3	186.4
Low	166.8	132.5

Alcohol Jobber Association

An organization of alcohol jobbers was proposed and the groundwork laid at a meeting of the metropolitan jobbers held June 25 at the New York Athletic Club, this city. Charles L. Read, of Charles L. Read & Co. started the movement to eliminate sharp and unethical practice to the end that the jobbing of alcohol may be put on as sound and satisfactory a basis as is the production of alcohol through the Industrial Alcohol Institute.

Among the concerns represented at the meeting were the Harriss Co., A. Haeuser & Co., Renouf & Co., A. Klipstein & Co., the Mantrose Corp., Sklar & Son, the Marley Chemical Co., Henry Miner & Son and I. Sagavitz.

The enthusiasm at the meeting was such that ultimately the organization may become nationwide in scope.

Announcement has been made of the organization of the International Vitamin Corp. which will hold patents for the extraction of vitamins A D and E from various substances. Dr. J. K. Marcus, inventor of the process will be chief chemist, and Julian M. Gerard, formerly of the International Germanic Trust Co. will devote his time to the new corporation. There will be 200,000 shares of capital stock of no par value issued.

The Company will manufacture a small gelatin pearl of vitamin A and D concentrates, which may be added to foods now deficient in vitamins.

Pera-Pine Perfect Products Co., which recently moved to Rock Island, Ill. has started production in the building formerly occupied by the Illionis Thresher Co., and is producing its line of bath salts, washing powders, hand cleaners and similar products, with furniture, auto, metal and leather cleaners. H. G. Waterman is head of the company.

Monsanto announce the addition of C. P. sulphuric acid, C. P. muriatic acid and C. P. nitric acid to their list of products. Having long supplied commercial sulphuric, muriatic and nitric acid to large consuming industries it is logical that Monsanto should apply its knowledge and experience in fine chemicals manufacture towards their refinement to the most exacting C. P. standards.

Harry B. Thompson, general counsel of the association, has gone to his farm in Ohio for a vacation. Ervin F. Kemp, general representative of the association, and Mrs. Kemp have taken a cottage for the summer at Blue Ridge Summit, Pa.

H. K. Mulford Co. declared regular semi-annual dividend of $1.50, payable August 15 to stock of record July 15.

American Home Products declared regular monthly dividend of 30c a share, payable August 1 to stock of record July 15.

"... and add that quality touch!"

Amerseal Caps can help increase your sales by increasing the attractiveness of your packages—by making the contents easy to get at—easy to use and by keeping them in perfect condition. They have done it for hundreds of products and they can for yours... The illustration shows how effectively standard and specially lithographed Amerseal Caps can be made to harmonize with and help surround packages with an atmosphere of quality. Some of these products are used daily—some less often. But, in every case, the contents are easy to get at.

Amerseal Caps do not "gum" or stick. A quarter turn removes them. Another quarter turn and the package is reclosed—as effectively the 100th time as the first... All of the products shown are liquids. Most of them are used on trips—carried in bags—laid on their sides—turned upside down. Some of them contain highly evaporable ingredients. Some deteriorate with exposure to air. Here certainly a dependable seal is essential. And it is primarily because of its dependability that the Amerseal Cap is so widely used on products that demand protection from leakage, evaporation and deterioration.

Amerseal Caps have many other important advantages that will surely interest your cost and production minded men. May we tell you more about them?

A quarter turn to the right applies the Amerseal Cap. The lugs, formed to fit the contour of the glass threads, draw the cap down and effect a tight uniform contact *around the complete circumference of the container finish.*

THE AMERSEAL CAP

AMERICAN METAL CAP COMPANY

2 Summit Street, Brooklyn, New York

Eighteen Branch Offices to Most Efficiently Serve You

Atlanta	Houston	Philadelphia
Baltimore	Los Angeles	Pittsburgh
Boston	Louisville	Rochester
Chicago	Minneapolis	St. Louis
Cleveland	Newark	San Francisco
Detroit	New York	Seattle

The Financial Markets

Katz Drug Stores to Expand

The Katz Drug Stores of Kansas City, Kansas, operating two stores in that city, are to be the nucleus of a chain of additional drug stores to be located throughout the Middle West. One new store has been opened in Kansas City, Kansas, and long term leases have been executed for two more stores in Kansas City, Mo. The new company is a Delaware corporation known as the Katz Drug Co.

The original Katz stores, established 15 years ago, now maintain an expanding mail order business, and employ over 300 people. Comparative earnings of the original company for the two years ending Dec. 31, 1928, after depreciation, elimination of net non-recurring charges averaging $28,761.24 per annum, and deduction of Federal and Missouri State income taxes, were as follows:

Year	Net Sales	Net Earnings	Per share on 15,000 shares Perferred	Per share on 100,000 shares Common
1927	$4,247,648.15	$265,690.71	$17.71	$1.68
1928	4,710,740.35	353,183.46	23.54	2.55

Net sales for the four months ended April 30, 1929, were 10.21 per cent. greater than for the corresponding period in 1928. Net earnings for the period Jan. 1, to May 1, 1929, after depreciation, elimination, of net recurring charges amounting to $14,641.99, and deduction of Federal and Missouri State income taxes, amounted to $182,452.63. On an annual basis this would amount to $486,096.42, equivalent to $32.40 per share on the preferred stock, or nearly five times the annual dividend requirement; and after deduction of the annual preferred stock dividend requirement, would be equivalent to $3.88 per share for the common stock presently to be outstanding.

Stock in the new company is being offered by H. M. Byllesby & Co., New York, at $100 per share for 15,000 shares of preferred, and $25 per share for 40,000 shares of common.

Vick to Raise Dividend

Vick Chemical Co. declared regular quarterly dividend of $1 on the old stock, payable August 1 to stock of record July 17.

E. E. Prickett, vice president, stated: "The directors have committed themselves to an increased dividend, rate of which will be announced at the annual meeting to be held in August when the results of the fiscal year will be known and plans are made for the ensuing fiscal year."

Additional Vick stock to be received in accordance with a split-up of stock recently authorized by the directors will be distributed July 29.

Zonite Stock Increased

Zonite Products Corp. has called special stockholders meeting on July 11 to vote on increasing capital to 500,000 shares from 200,000 shares of no-par value common stock. A total of 200,000 shares will be sold to acquire business of A. C. Barnes Co., of which 176,000 shares have been offered to stockholders on a share for share basis at $30 a share. Rights expire July 15. After sales of stock company will have outstanding 376,000 shares.

The Directors of the Fleischmann, Royal Baking Powder, and E. W. Gillett Companies have selected the name Standard Brands, Inc. for the merged companies. The three companies will retain their operating identities for the present at least.

U. S. Alcohol Buys Kentucky

The United States Industrial Alcohol Co. has contracted to acquire the assets, and business of the Kentucky Alcohol Corp. a wholly owned subsidiary of the National Distillers' Products Corp. Payment will be made with stock of the United States Industrial Alcohol Co.

National Distillers' Products Corp. has also contracted to sell to the United Molasses Co., Ltd., of London, its molasses business, represented by stock ownership in the Old Time Molasses Co., a Cuban corporation, and its half interest in the Eastern Alcohol Corp. The other half interest in the Eastern Alcohol Corp. is owned by E. I. Du Pont de Nemours & Co.

Proceeds of the sale to United Molasses will be used to retire the preferred stock and outstanding ten-year 6½ per cent. notes of National Distillers' Products, it is expected. This will leave National Distillers in the distilled spirits business represented by stock in the American Medicinal Spirits' Co., and its investment in the cherry, olive and glace fruit business, represented by stock in Henry H. Shufeldt Co., as well as miscellaneous assets against its outstanding 168,000 shares of common stock.

Household Products Earnings Steady

Household Products Co. for the six months ended June 30, will report earnings which will closely approximate those reported for the first six months of each of the past three years. Profits for the first six months of last year were less than $1,000 in excess of the earnings for the first six months of 1926, and only slightly more than $200 ahead of the first six months of 1927.

Net profits for the first half of last year were $1,519,246, equal to $2.64 a share on the 575,000 shares outstanding. Earnings in the corresponding periods of the two previous years also equalled $2.64 a share.

With earnings showing very little change from year to year, Household Products has for some time paid regular dividends of $3.50 annually, and an extra of 50c, leaving a substantial amount to be added to surplus. Profit and loss surplus has now been built up to $4,118,297, or over $7 a share on the 575,000 shares.

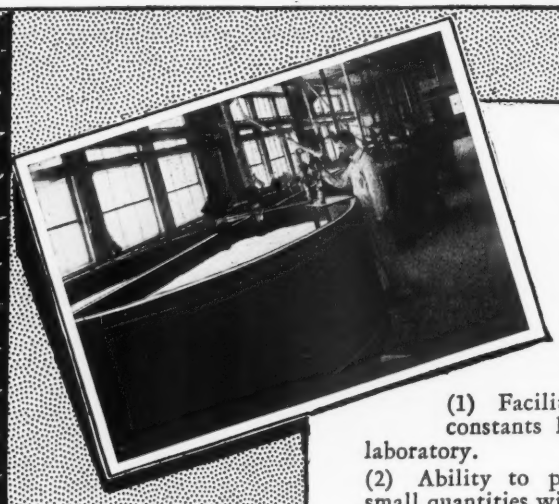
Lambert in New Business

Lambert-Fesler, Inc., recently organized, has acquired Dew Deodorant from the Geo. C. V. Fesler Co. The present policies of Fesler will be continued and the advertising program greatly increased. The laboratories and office of the company will be located in Del Monte Way, St. Louis.

The officers of Lambert-Fesler, Inc., are : President, Marion L. J. Lambert, formerly of the Lambert Pharmacal Co.; vice-president and director, George C. V. Fesler, formerly owner of Dew, who will be in charge of publicity and foreign department; secretary and director of sales, C. F. Montgomery, formerly in charge of sales of Lambert Pharmacal Co.

Weinberger Drug Stores, Inc., report total sales for June of $130.282, an increase of 200 per cent. over the corresponding month last year. The total for the year to date is $613,148, compared with $235,957 for the first six months of 1928. The company plans to open five stores this year in addition to the fourteen units now operated.

Boncilla Laboratories, Inc., of Indianapolis, have appointed Van Allen Co., Chicago and Detroit, to direct their advertising campaign. Magazines and radio will be used.



NEUTRAL SOAPS

POWDERED—GRANULATED—FLAKES

IN THESE kettles are made the wide range of pure, uniform, Laboratory Controlled Powco Soaps. Not just *one* soap for *all* purposes — *but the correct soaps for your dentifrice, lotions, etc.*

Ample kettle capacity means:—

(1) Facilities for holding soaps in the kettles until constants have been corrected and OK'd by the laboratory.

(2) Ability to produce large quantities promptly, or small quantities with equal facility.

(3) A steady production, *especially important during the summer*, which delivers to you fresh goods.

(4) Constant check for uniformity of chemical and physical constants, assuring you neutral soaps to specific formulae, whether you buy a keg or a carload.

JOHN POWELL & CO. INC.
114 EAST 32nd ST. NEW YORK CITY

Hy-Speed

ELECTRIC MIXING TANKS AND FILTERS

Patented
Nov. 27, 1928

Are used everywhere because they combine extreme economy with real operating efficiency. The Glass-Lined Mixing Tank illustrated is in great demand because... the motor is above the liquid... the top and bottom of the tank are mixed simultaneously... there is no stuffing-box to leak or obstruct cleaning... it is lined inside and coated outside with acid-resisting glass,.. and the low price makes it a real bargain in any capacity from 1 to 200 gallons.

INTERNAL PRESSURE FILTER

The new *"Hy-Speed"* Filter produces a crystal-clear product free from dirt with a minimum of trouble. Can be cleaned in two minutes. *Filtered* liquids can be pumped to any part of plant in same operation. Operates from light circuit.

Write for our attractive new catalogue: "The Hy-Speed AGE"

ALSOP ENGINEERING COMPANY

Makers of "Hy-Speed" Mixers, Filters, Bottle Fillers, Pumps, and ALSOP Glass-Lined Tanks.

47 WEST 63RD STREET NEW YORK CITY

Drug Industry Stocks

1929 June 30th Bid	1929 June 30th Asked	1929 High	1929 Low	1928 High	1928 Low	Sales in June	Sales from Jan. 1,1929 to June 30th	ISSUES	Par $	Shares Listed	An. Rate	Earnings $-per share-$ 1928	Earnings $-per share-$ 1927
								NEW YORK STOCK EXCHANGE					
320	328	328	241	252¾	146	73,800	473,500	Allied Chemical	No	2,178,109	$6.00		10.03
151¾	154	154	107¾	117¾	70¼	904,200	8,277,600	American Can	25	2,473,998	3.00		4.11
139	139½	142	139	147	136¾	3,700	22,700	pfd	100	412,333	7.00		31.66
59	60½	60¾	46¾	50¾	44	32,300	246,400	American Chicle	No	373,190	2.00	9 mo. 6.48	41.04
...	...	114½	109½	114	107		700	pfd	No	33,200	7.00	9 mo. 42.13	6.78
...	...	11	9	15½	10½		33,100	American Drug Syn	10	1,000,000	0.80		0.81
72½	72¾	85¾	64	86	59	3,530	254,230	American Home Products	No	534,000	3.00	6 mo. 2.52	3.67
...	...	92½	56¾	83¼	70½		35,700	Certo Corp	No	300,000	3.00	9 mo. 5.19	3.87
14¾	14½	23½	12	36	20	13,600	120,400	Container Corp. Class A	20	271,189	1.20	9 mo. 1.46	2.26
6¾	7	11½	6	19¼	9¼	16,000	184,200	Container Corp. Class B	No	568,289	.60	9 mo. 0.73	1.13
77½	78¼	80¼	60	128¼	53	282,100	2 080,200	Continental Can	No	*710,000	*5.00	8 mo. 7.61	7.21
125	128	126	124¾	128	123	40	1,260	pfd	100	51,125	7.00	8 mo. 111.39	86.82
99¼	101¼	102¼	82	94	64¾	207,700	923,200	Corn Products	25	2,530,000	2.00	9 mo. 3.00	3.50
141½	141½	144¾	141	146¾	138½	930	8,580	pfd	100	250,000	7.00	9 mo. 35.63	42.40
60¾	62¾	82½	51	89¼	62¾	179,700	1,707,800	Coty, Inc	No	†327,762	†2.00	9 mo. 9.23	10.80
109	109½	126½	105	120½	80	25,700	359,400	Drug Incorporated	No	2,183,990	4.00	8 mo. 3.60	11.47
82½	82¾	87¾	65½	89¾	65	1,011,600	2,339,600	Fleischmann	No	4,500,000	‡3.50	9 mo. 3.24	4.30
65¾	67½	79½	62	84	64½	8,000	66,900	Household Products	No	575,000	‡4.00	6 mo. 2.64	5.22
46½	47½	57¾	44½	27½	13½	2,000	28,800	Kresge	10	3,678,720	‡1.60	9 mo. 2.76	3.76
112½	114	116	109	118	110½	230	1,890	pfd	100	20,000	7.00	9 mo. 512.30	698.85
145¾	148	157½	127½	136¾	79½	204,800	1,869,800	Lambert Co	No	571,906	‡6.50	9 mo. 6.62	6.23
51¾	52	68¾	50¾	64¾	38	10,100	232,700	Lehn & Fink	No	295,000	3.00	6 mo. 3.25	4.32
...	...	...	...	40½	28½		13,900	Life Savers	No	550,000	1.60	10 mo. 2.10	2.01
51¾	52	59	49	50¾	45½	12,200	203,700	McKesson & Robbins, Com	No	664,409	1.60	4 mo. 1.42	0.91
59¾	60	62	55	63¾	54	5,300	74,600	pfd	50	315,086	3.50	4 mo. 4.15	8.94
56¼	58¾	58¾	42½	190	117¾	88,400	269,380	Mathieson Alkali	No	147,207	6.00	9 mo. 9.54	10.93
49½	50¾	107½	67¾	71¾	51½	113,400	222,800	Nat'l Dist. Pfd	No	107,720	.....		0.55
...	...	84	78	95¾	74½	5,300	133,500	Ownes Bottle	25	768,860	4.00	9 mo. 4.13	5.37
53½	55	87¾	47	56¾	47½	29,300	283,800	Park & Tilford	No	200,000	3.00	9 mo. 5.09	3.70
79	79¾	82½	50	91	52	360	1,550	Prophylactic Brush	No	100,000	‡4.00	6 mo. 2.47	6.18
...	...	...	...	...	...			Rossville Com'l Alcohol Corp	No	120,000	.....		
20	20½	41½	20	67½	35¾	46,600	839,900	Schulte	No	1,121,667	3.50	6 mo. 1.99	4.90
14	14¾	22¼	13¾	23¾	11¾	4,900	129,500	Sweets Am	50	100,000	1.00	9 mo. 0.97	0.47
179½	181½	187	128	138	102½	138,000	905,600	U. S. Ind Alc	No	240,000	6.00	6 mo. 3.90	7.26
...	...	127	124½	125½	118¾		880	pfd	100	60,000	7.00	6 mo. 19.12	36.03
90½	91	109	82	85	58	8,400	196,300	Vick Chemical Co	No	400,000	4.00	6.06	5.36
...	...	15	13	25¾	11¾			Vivaudou	No	381,573	.....	9 mo. 0.61	2.19
...	...	...	...	100	78			pfd	100	28,578	7.00	9 mo. 13.32	35.42
224	228¾	232½	192½	225¾	175¾	22,700	629,500	Woolworth, F. W	25	3,900,000	6.00		9.06
73¼	73½	80¾	70	84	68	18,600	120,300	Wrigley	No	1,800,000	‡3.50	9 mo. 4.38	5.43
								NEW YORK CURB					
2	3¼	7¼	1¼	...	6¼	1,500	10 300	Allison Drug Class A	No	70,000	.....	6 mo. 0.33	7 mo. 2.03
1½	1¾	11	1	15¾	3¼	1 413	51,113	Allison Drug Class B	No	95,000	.....	6 mo.	7 mo. 0.89
...	...	...	...	87¾	74		98,400	American Com'l Alc. Corp. V.T.C.	No	77,000	.....	3 mo. 2.66	
43	43½	40½	25	28¼	11¾	3,800	138,200	Amer. Sol. & Chem. Corp., V.T.C.	No	160,000	.....	1.58	0.17
...	...	55¾	42	47¾	25¼	1 600	70,100	Con. Partic pfd	No	100,000	$3.00	4.00	3.17
...	...	121¾	84¼	97¾	65	62,160	123,600	Bristol Myers Co. Com	No	180,000	4.00	6 mo. 3.80	5.82
162	168	170½	140¾	...	...			Ches. Mfg. Co	25	120,000	.....		8.49
...	...	80½	63	92	75	3,100	42,900	Colgate-Palmolive-Peet Com	No		2.00		
...	...	100	98	...	...		300	pfd	No		6.00		
15½	16	57½	15½	57½	56	1,300	24,700	Davis Drug Stores Allot. Ctfs	No	100,000	.....	7 mo. 6.71	5.02
...	...	33¾	24	38½	23	1,200	11,600	Forhans	No	150,000	1.00	1.89	2.21
...	...	26½	17¾	...	...	4,050		Helena Rubenstein		135,000	.....		
...	...	41½	19¾	23	7¾	2,600	14,700	Heyden Chemical Corp	10	150,000	.....		1.02
...	...	...	...	...	...			May Drug Stores	No	200,000	1.50	1.38	1.82
52	56	67¾	53	72	50¾	1,700	22,000	Mead-Johnson	No	165,000	3.00	6 mo. 2.94	6.33
...	...	160	125½	98	38¾	275	1,225	Monsanto Chemical	No	110,000	2.50	9 mo. 6.30	6.11
...	...	32¾	10	28¼	10¼	300	3,200	Nauhelm Pharmacies Com	No	90,000	.....		3.03
15	15¼	32¾	10	37¾	20¼	100	4,900	pfd	No	45,000	2.50		8.56
48	49	58¼	44¼	55	38	1,300	30,400	Parke Davis & Co	No	4,747,829	1.00	1.73	1.54
80	80¼	94	74¼	91	48	1 300	34,650	Peoples Drug Store	No	122,250	1.00		3.31
374½	376	382	281	300	247	1,350	16,575	Proctor & Gamble	20	1,250,000	8.00	11.96	11.38
86½	89¾	91¾	71¼	102½	37¾	9,600	112,300	Walgreen Co. Com	No	766,354	.....	9 mo. 2.17	1.59
...	...	...	...	43	26¾		23,800	Woodworth, Inc., Com	No	100,000	1.50	6 mo. 1.04	11 mo. 3.68
33	35¼	44¼	31¼	48¾	27	6 000	59 300	Zonite Products Corp	No	176,000	.....		6 mo. 0.98
								CLEVELAND					
...	...	295	00	112½	25	43	737	Dow Chem. Co	No	120,000	6.00		
...	...	107½	104½	107	103¾	55	390	pfd	100	30,000	7.00		
...	...	42	27	30	24	82	10,574	Miller Wholesale Drug Com	No	17,000	1.60		
...	...	50	24	24	21¾	673	11,245	Weinberger Drug, Com	No	20,000	.....	9 mo. 3.51	1.35
								CHICAGO					
...	...	52	39	...	...	3,050	28,300	Abbott Laboratories	No	120,000	2.00		
...	...	29½	12	31½	21½	5,650	70,195	Lane Drug Co., Com	No	90,000	.....	7 mo. 1.47	3.13
...	...	32	20	31½	23	2 150	33,660	Cum. pfd	No	65,000	.....	7 mo. 3.20	6.34
								CINCINNATI					
...	...	41½	20½	...	...	360	2,411	Dow Drug Co	No	90,000	1.00		
...	...	...	...	...	...			pfd	100	4,000	7.00		
								BALTIMORE					
...	...	...	...	...	...		41	Sharp & Dohme, pfd	100	10,000	7.00		
								UNLISTED					
...	...	...	...	...	...			Heyden Chemical Corp., pfd	100	3,100	7.00		56.18
67	73	...	...	...	...			Merck Pfd	100	33,950	5.00		
...	...	...	...	...	...			Mulford, H. K. & Co	100	30,154	3.00		
...	...	...	...	...	...			Noxzema Chem. Co			.....		
58	63	...	...	...	...			Squibb Com	No	411,778	.....		1.69
97	100	...	...	...	...			pfd	No	63,888	6.00		16.92

*Before giving effect to 100% stock dividend.
†Before giving effect to 300% stock dividend.
‡Includes extras.

Prices Current

Medicinal, Aromatic, and Photographic Chemicals, Crude Drugs, Spices, Essential Oils and Concentrates, Miscellaneous Raw Materials, etc.

Chemical prices quoted are of American manufacturers, spot New York, f. o. b. for immediate shipment, unless otherwise specified.

Products sold f. o. b. works are so specified. Imported chemicals are so designated. Resale stocks, when a market factor, are indicated "second hand."

Crude Drugs and Essential Oils are quoted f. o. b. New York (Manhattan with limitations) for immediate shipment.

The range of price given is not "bid and asked," but are prices of different sellers, based on varying grades and/or quantities. Containers named are original packages most commonly sold.

Chemicals

Monthly Review

Alcohol Position Strong

Alcohol shows itself at this period in an exceptionally strong position. Distillers have booked for future delivery a large percentage of their alloted production and every indication points toward firm prices between now and cold weather when withdrawals are at their highest. Midwinter should see a considerable firming up in the price tendency with the possibility of higher quotations prevailing if the present trend and outlook of the market continues.

The only cloud on the horizon at all at present is the possibility of an increase from 1-6 of one cent a gallon to four cents per gallon in the duty on non-edible blackstrap molasses, the principal raw material for the manufacture of alcohol. The whole situation, however, looks encouraging as well organized opposition to any tariff increase on molasses by both the producers and representatives of alcohol-using industries in general has resulted in restoring the duty on non-edible blackstrap molasses to the rate fixed in existing law, 1-6 of one cent per gallon when the bill was called up in the House and passed.

This is the rate pending before the Senate for consideration. On August 19, the senate will reconvene, when it is thought that the Senate Finance Committee will report a tariff revision bill based upon its consideration of the measure passed by the house. In the meantime continued effort will and should be made to bear upon senators and congressmen to support the duty on non-edible blackstrap molasses fixed in the bill passed by the house.

When Will Bismuth Subnitrate Advance?

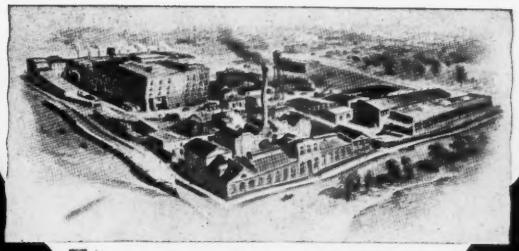
Bismuth subnitrate still sells at price lower than the selling price of the metal although the subnitrate must be manufactured from this same metal. How long the manufacturers of bismuth salts are going to pick out this one of the salts to use in waging a competitive battle against price cutting is not known, but there are no indications that there will be any upward revision of prices in the near future.

That upward revision will come, however, seems certain, for all manufacturers cannot continue content to lose money on this popular product, especially when the sharp downward revision is not accomplishing the stabilization of the market that it was designed to accomplish.

In the meanwhile, consumers should keep goodly stocks of this product on hand. They should also fail to figure the cost of their finished goods containing this product at the current market, for some day the manufacturers will decide that the time has come to put an end to the losing proposition and the market will move up swiftly. Whether this move will come before some of the producers quit the field and leave a nice market for the bitter enders, we do

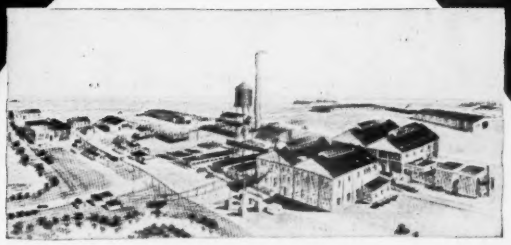
	Current Market	1929 High	1929 Low	1928 High	1928 Low
Acetanilid, USP, 200 lb bbls..lb.	.36	.37	.37	.36	.37	.28
Acetone, pure 350 lb drs wks..	.17	.19	.19	.16	.18	.14
Acetphenetidin, 225 lb bbls..lb.	1.25	1.35	1.35	1.25	1.40	1.25
ACID, Acetylsalicylic, 225 lb .....bbls.	.85	.90	.90	.85	.90	.85
Agaric, 1 oz vials.....oz.	.....	3.50	3.50	3.50	3.50	3.50
Arsenous, USP, 220 lb bbls lb.	.....	.18	.18	.18	.18	.18
Benzoic, USP, 100 lb bbls.lb.	.60	.61	.61	.60	.61	.60
Boric, 300 lb bbls.....lb.	.07½	.08	.10½	.07½	.12	.11
Cacodylic, 5 lb. bot.....lb.	.....	8.00	8.00	8.00	8.00	8.00
Camphoric, USP, VIII 1 lb bot.....lb.	4.82	4.82	4.82	4.82	4.82	4.82
Carbolic, USP, crys 112 lb tins.....lb.	.18	.19	.19	.14	.21	.14
Cinnamic, 5 lb cans.....lb.	3.25	3.50	3.50	3.25	3.50	3.25
Citric, USP, crys 230 lb bbl .....lb.	.....	.46	.46	.46	.46	.44½
USP, crys imp. 112 lb keg .....lb.	.59	.61	.61	.59	.61	.55
USP, powd 200 lb bbl...lb.	.....	.47	.47	.47	.47	.45½
Diethylbarbituric, 1 lb bot lb.	.....	4.60	4.60	4.60	4.60	4.60
Gallic, USP, 150 lb bbls..lb.	.....	.74	.74	.74	.74	.74
Glycerophosphoric, 25% 1 lb bot.....lb.	1.40	1.75	1.75	1.40	1.45	1.40
Hydriodic, USP, 10% 5 lb bot.....lb.	.....	.80	.80	.80	.80	.80
Hydrobromic, USP, 40% 155 lb. cbys.....lb.	.....	.55	.55	.55	.55	.55
Hypophosphorous, USP, 30% .....lb.						
5 gal demis.....lb.	.....	.85	.85	.85	.85	.85
Lactic, USP, VIII 100 lb cbys lb.	.56	.62	.62	.56	.62	.56
USP, X 100 lb cbys.....lb.	.62	.64	.64	.62	.64	.62
Phenylcinchonic.....lb.	.....	4.50	4.50	4.50	4.50	4.50
Phosphoric, USP, Syr 70 lb drs.....lb.	.14	.15	.15	.14	.16	.14
Pyrogallic, crys 5 lb cans..lb.	1.40	1.50	1.50	1.40	1.50	1.40
Resublimed, 5 lb cans...lb.	1.80	1.85	1.85	1.80	1.85	1.80
Salicylic, USP, 100 lb bbls.lb.	.39	.40	.40	.39	.41	.40
Succinic, 100 lb bbls.....lb.	.....	1.35	1.35	1.35	1.35	1.35
Sulfurous, USP, 6% 100 lb cbys.....lb.	.05	.06	.06	.05	.06	.05
Tannic, USP, fluffy 50 lb bbls. .....lb.	.85	.90	.93	.85	.93	.87
Powd 200 lb bbls.....lb.	.80	.85	.85	.80	.85	.80
Tartaric, USP, 300 lb bbls.lb	.37½	.38½	.38	.37½	.38	.35
Aconitine, Alk, crys 1 oz vials .....oz.	.....	30.00	30.00	30.00	30.00	30.00
Amorphous, 1 oz vials....oz.	.....	20.00	20.00	20.00	20.00	20.00
Adeps Lanae, hyd 350 lb bbls lb.	.15	.16	.16	.15	.16	.15
Anhydrous, 350 lb bbls....lb.	.16	.18	.18	.16	.19	.16
Agaricin, 1 oz vis incl.....oz.	.....	2.32	2.32	2.32	2.32	2.32
ALCOHOL, Benzyl, 5 lb bot lb.	1.25	1.35	1.35	1.25	1.55	1.25
Ethyl, USP, 190 pf 50 gal bbls.....gal.	2.69½	2.79½	2.79½	2.69½	2.79½	2.66½
Pure tax free.....gal.	.61	.69	.69	.61	.77	.54
Grain drums.....gal.	2.69	2.79	2.79	2.69	4.00	2.67
Denatured, drums add 7c for bbls.....						
No. 1 spec.....gal.	.50	.58	.58	.47	.55	.43
1 comp.....gal.	.51	.59	.59	.48	.56	.44
No. 5 comp.....gal.	.50	.58	.58	.47	.56	.44
23 a, spec.....gal.	.51½	.59½	.58½	.48½	.68	.43½
39 b, spec.....gal.	.54	.63	.71	.62	.71	.56
40 m. spec .....gal.	49½	57½	.66½	.56½	.66½	.51½
Isopropyl refd 98-99% drs .....gal.	1.25	1.50	1.50	1.25	1.50	1.25
Phenylethyl, 1 lb bot.....lb.	8.00	10.00	10.00	8.00	10.00	8.00
Aloin, USP, 100 lb cases....lb.	1.65	1.70	1.70	1.25	1.30	.90
Aluminum Acetotartrate kegs .....lb.	...	1.60	1.60	1.60	1.60	1.60
Amidipyrine, 10 lb boxes....lb.	4.25	4.45	4.45	4.25	4.75	4.25
AMMONIUM, Acetate 100 lb kegs.....lb.	.38	.40	.40	.30	.38	.34
Benzoate, USP, 1 lb bot...lb.	.....	1.27	1.27	1.27	1.27	1.27
Borate, 10 lb bot.....lb.	.....	.35	.35	.35	.35	.35
Bromide, USP, 450 lb bbls.lb.	.47	.49	.50	.47	.50	.48
Imported, 112 lb boxes..lb.	.48	.50	.50	.48	.50	.48
Carb, USP, lump 100 lb kegs .....lb.	.....	.13½	.13½	.13½	.13½	.13½
USP, powd 100 lb kegs..lb.	.....	.14½	.14½	.14½	.14½	.14½
Citrate, 100 lb kegs.....lb.	.85	.90	.90	.85	.90	.85
Ichthyolate, as to brand..lb.	4.00	4.50	4.50	4.00	4.50	4.00
Iodide, USP, 25 lb jars...lb.	.....	5.20	5.20	5.20	5.20	5.20
Phosphate, dibasic 250 lb bbls .....lb.	.48	.50	.50	.43	.48	.43
Salicylate, USP, 100 lb kegs .....lb.	1.15	1.20	1.20	1.15	1.20	1.15
Valerate, USP, 25 lb jars...lb.	2.75	2.90	2.90	2.75	2.90	2.75

FINE
HEYDEN
CHEMICALS



GARFIELD, N. J., PLANT

SALICYLIC ACID
SODIUM SALICYLATE
METHYL SALICYLATE
ACETYL SALICYLIC ACID
AND MINOR
SALICYLATES



PERTH AMBOY, N. J., PLANT

HEYDEN CHEMICAL CORP.
45 E. 17TH STREET NEW YORK
180 N. WACKER DRIVE CHICAGO

{ Monthly Review }

not know. All that we do know is that the consumers' picnic cannot go on forever.

Cod Liver Oil Catch Completed

Newfoundland cod liver oil industry is discouraged by the large Norwegian production with resultant dullness in trade, according to a cable from Consul A. M. Warren, St. Johns. Iceland is also an important competitor; during 1927 and 1928 exports of cod liver oil from Iceland amounted to 5,629,000 kilos and 6,687,000 kilos, respectively.

The fishing season in Norway is now closed, and although the season as a whole has been satisfactory, it will be noted from the following figures that in comparison to the number of cod caught, the yield of oil is not as favorable as formerly nor is the yield as plentiful as during the years 1924, 1925 and 1926.

The number of cod caught and the quantity of oil produced for the entire season for the whole of Norway are as follows:

78,650,000 Cod 2,422,925 gallons Cod Liver Oil as against

64,200,000	"	1,348,447	"	"	"	in 1928
66,754,000	"	1,904,681	"	"	"	" 1927
89,106,000	"	3,199,839	"	"	"	" 1926
60,100,000	"	2,498,754	"	"	"	" 1925
69,900,000	"	3,049,891	"	"	"	" 1924

The market on the whole is quiet with no change in price. The fact that prices are holding up quite well in face of the off season for cod liver oil would indicate a firm undertone with every possibility that with the approach of the colder weather a much stronger tendency will assert itself.

Camphor Production Less

Camphor is one of the articles that is not feeling the pinch of hard times in Japan. The United States is the largest consumer of Japanese camphor in the world and British India is the second. America consumes about half of the total exports. Last Year's exports totaled yen 5,447,522 for 36,607 piculs, of which America consumed yen 2,413,507 of 17,808 piculs, according to the Ministry of Finance. Exports to America and British India for the last three years follow:

	Total Exports (In Yen)	*To U. S.*	*To British India*
1926	5,742,167	2,440,872	1,432,214
1927	5,637,732	2,274,201	1,169,051
1928	5,447,522	2,413,507	1,448,830

Apart from refined camphor, there is observed a conspicuous gain in the consumption of crude camphor, reports Drug Markets Japanese correspondent. There is little knowledge in Japan of all the purposes of which camphor is used abroad. It is well known that camphor is used as a disinfectant and material for celluloid. Pure camphor is also used as an ingredient in various kinds of medicine. Beyond that it is difficult to trace where it is consumed.

Only recently the Japanese Government dispatched abroad experts to investigate the purposes of camphor used there but all that they could report was that it is substantially used as a home medicine in America and England. It is said the use of camphor as a chemical is not very large.

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Amylene Hydrate, 1 lb bot..lb.	.....	7.10	7.10	7.10	7.10
Antipyrine, USP, 100 lb cans.lb.	1.80	1.82	1.82	1.53	1.75 1.53
Apomorphine Hydrochloride, ¼ oz. vials.....oz.	22.60	22.70	22.70	22.60	35.80 22.60
Arecoline Hydrobrom, 1 oz vials .....oz.	7.75	8.75	8.75	7.75	11.45 7.75
Aspidospermine Amorphous..oz.	.....	15.00	15.00	15.00	15.00 15.00
Atropine Alk, USP, 1 oz. vials .....oz.	7.00	9.10	9.10	7.00	9.10 9.10
Methyl bromide, 1 oz vials.oz.	.....	25.00	25.00	25.00	25.00 25.00
Sulfate, 5 oz cans.....oz.	.....	3.00	3.00	3.00	3.00 3.00
Single ounce.....oz.	.....	3.15	3.15	3.15	3.15 3.15
Barium Iodide, 5 lb box.....lb.	.....	5.15	5.15	5.15	5.15 5.15
Sulfate, X-ray diagn bbls..lb.	.09½	.10	.10	.09½	.10 .09½
BAY RUM Porto Rico, 45 gal. bbls.....gal.	.85	.90	.90	.85	.90 .80
Domestic syn. 50 gal bbl..gal.	.70	.75	.75	.70	.75 .65
St. Thomas, 50 gal bbls...gal.	.80	.90	.90	.80	.90 .80
Benzonaphthol, 5 lb boxes...lb.	2.50	2.60	2.60	2.50	2.60 2.50
Benzoyl Cholride, 500 lb dr...lb.	.....	1.00	1.00	1.00	1.00 1.00
Benzyl Benzoate, Medicinal FFC.....lb.	.....	1.40	1.40	1.40	1.40 1.40
Chloride Redis, 160 lb cby.lb.	.30	.35	.35	.30	.35 .30
Formate, 1 lb bot.....lb.	3.25	3.50	3.50	3.25	3.50 3.25
Succinate, 160 lb cby.....lb.	.....	5.25	5.25	5.25	5.25 5.25
BISMUTH, metal 100 lb cases .....lb.	.....	1.70	1.70	1.70	2.25 1.70
Ammon. Citrate, USP, 5 lb cans.....lb.	.....	5.50	5.50	5.50	5.65 5.50
Betanaphtholate, 5 lb box.lb.	.....	3.10	3.10	3.10	3.35 3.10
Citrate, USP, 5 lb cans....lb.	.....	2.75	2.75	2.75	2.95 2.75
Chloride.....lb.	.....	3.15	3.15	3.15	3.40 3.15
Hydroxide.....lb.	.....	3.05	3.05	3.05	3.30 3.05
Nitrate, 25 lb jars.....lb.	.....	1.80	1.80	1.80	1.95 1.80
Oxide anhydrous.....lb.	.....	3.40	3.40	3.40	3.70 3.40
Oxychloride, 25 lb boxes...lb.	.....	3.10	3.10	3.10	3.35 3.10
Salicylate, 25 lb boxes.....lb.	.....	1.80	1.80	1.80	1.95 1.80
Subcarbonate, USP, 25 lb boxes.....lb.	.....	2.20	2.20	2.20	2.70 2.20
Subcarbonate, X-ray diag 1 lb. bot.....lb.	.....	3.45	3.45	3.45	3.65 3.40
Subgallate, USP, 25 lb boxes .....lb.	.....	2.50	2.50	2.50	2.70 2.50
Subiodide, 5 lb lots.....lb.	.....	4.25	4.25	4.25	4.40 4.20
Subnitrate, USP, 25 lb jar.lb.	1.60	1.65	1.65	1.60	2.30 1.60
Subsalicylate, USP, 25 lb boxes.....lb.	.....	2.90	2.90	2.90	3.15 2.90
Tannate.....lb.	.....	2.65	2.65	2.65	2.65 2.45
Borax, crys USP, 400 lb bbls.lb.	.....	.03½	.03½	.03½	.05 .03½
Bromoform, USP, 5 lb bot cases .....lb.	1.65	1.90	1.90	1.65	1.90 1.65
Butylchloral Hydrate bot....lb.	4.00	5.00	5.00	4.00	5.00 4.00
Cadmium iodide, 10 lb bot...lb.	.....	4.55	4.55	4.45	4.55 4.45
CAFFEINE Alk, USP, 1..... 100 lb kegs.....lb.	2.90	2.95	2.95	2.90	3.20 2.80
Citrated, 50 lb cans.....lb.	2.35	2.60	2.60	2.00	2.25 2.00
Hydrobromide, 1 lb bot...lb.	4.80	5.00	5.00	4.80	5.00 4.65
Hydrochloride, 1 lb bot...lb	6.05	6.55	6.55	6.05	6.55 6.05
Sulfate, 1 lb bot.....lb.	5.40	5.90	5.90	5.40	5.90 5.40
Sodium Benzoate, tins....lb.	.....	3.05	3.05	3.05	3.05 3.05
Salicylate, tins.....lb.	.....	2.95	2.95	2.95	2.95 2.95
Calcium Bromide, 100 lb cs..lb.	.....	.60	.60	.60	.60 .60
Carb, USP, 175 lb bbls....lb.	.04½	.06½	.06½	.04½	.06½ .04½
Glycerophos, 250 lb bbls...lb.	.....	1.40	1.40	1.40	1.40 1.40
Hypophos, USP, 25 lb cans lb.	.60	.65	.65	.60	.65 .60
Iodide, 5 lb bot.....lb.	.....	4.35	4.35	.35	4.35 4.35
Lactate, USP, 500 lb bbls lb.	.45	.50	.50	.45	.50 .45
Lactophosphate Soluble...lb.	.....	1.20	1.20	1.20	1.20 1.20
Powdered tins.....lb	.....	1.00	1.00	1.00	1.00 1.00
Insol, powd tins.....lb.	.....	.50	.50	.50	.50 50
Sulfide, USP, 100 lb drs...lb.	.21½	.24	.24	.21½	.25 20
CAMPHOR, Jap. ref. slabs 100 lb. cases.....lb.	.59½	.60	.60	.59½	.66 .57
Refined powd.....lb.	.63	.64	.64	.63	.70 .62
½ oz tab, 100 lb cases....lb.	.75	.76	.76	.73	.75 .68
Liniment, bbls.....gal.	2.20	2.30	2.30	2.20	2.30 2.20
Monobrom, 100 lb cases...lb.	1.85	1.90	1.90	1.85	1.90 1.85
Casein edible, 100 lb kegs...lb.	.45	.55	.55	.45	.55 .45
Castor Oil, odorless, 200 gl. bbls. lb.	.14½	.....	.....	.....	....
Chalk drop, 175 lb bbls.....lb.	.....	.03½	.03½	.03½	.03½ .03½
Precip light, 250 lb csk....lb.	.....	.04½	.04½	.04½	.04½ .04½
Heavy 540 lb csks.....lb.	.02½	.03½	.03½	.02½	.03½ .02½
Bulk.....ton	.....	5.00	5.00	5.00	5.00 5.00
English, 7 lb bags.....lb.	.....	.08½	.08½	.08½	.08½ .08½
Charcoal Animal medicinal jars incl.....lb.	.....	.50	.50	.50	.50 .50
Charcoal Wood, powd, 100 lb. bbls.....lb.	.05½	.06	.06	.05½	.06 .05½
Chloroform, USP, 50 lb drs...lb.	.....	.27	.30	.27	.30 .28
Chloral Hydrate, USP, 25 lb jars.....lb.	.60	.65	.80	.75	.80 .70
100 lb drums.....lb.	.55	.60	.75	.70	.75 .65
Cholesterin.....oz.	5.50	5.85	5.85	5.50	5.85 4.00
Chromium Sulfate Scales, tins .....lb.	.55	.60	.60	.55	.60 .55
Powdered tins.....lb.	.60	.65	.65	.60	.65 .60
Chrysarobin, 50 lb tins.....lb.	3.75	4.10	4.25	3.75	4.25 3.65
Cinchonine Alk, 100 oz tins.oz.	.....	.38	.38	.38	.38 .38
Crystal.....oz.	.43	.46	.68	.65	.68 .65
Sulfate, 100 oz tins.....oz.	.....	.25	.25	.25	.25 .25
Cinchonidin Sulfate, 100 oz tins .....oz.	.35	.35	.35	.35	.35 .35
Cocaine Alk, USP, 1 oz vial..oz.	.....	11.07	11.07	11.07	11.07 11.07
Hydrochloride, USP.....oz.	.....	8.50	8.50	8.50	8.50 8.50
Cocoa Butter, 12 lb boxes...lb.	.42	.45	.45	.42	.50 .40

"ROCHE"

Digitalin Pure
Eserine Sulphate
Brucine Sulphate
Brucine Alkaloid
Codeine Sulphate
Atropine Alkaloid
Guaiacol Benzoate
Aconitine and Salts
Veratrine Alkaloid
Codeine Phosphate
Duboisine Sulphate
Pilocarpine Nitrate
Hydrastine Sulphate
Acid Diethylbarbituric
Colchicine Amorphous
Berberine Sulphate Acid
Arecoline Hydrobromine
Veratrine Hydrochloride
Hydrastine Hydrochloride
Berberine Sulphate Neutral
Strychnine Sulphate Crystal
Strychnine Alkaloid Crystal
Strychnine Alkaloid Powder
Homatropine Hydrobromide
Hyoscymine Alkaloid Crystals
Potassium Guaiacol Sulphonate

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Creosote Carbonate
Morphine Sulphate
Guaiacol Carbonate
Hydrastine Alkaloid
Cocaine Hydrochloride
Emetine Hydrochloride
Hyoscine Hydrobromide
Berberine Hydrochloride
Yohimbin Hydrochloride
Pilocarpine Hydrochloride
Hyoscymine Hydrobromide
Hydrastinine Hydrochloride
Strychnine Sulphate Powder
Apomorphine Hydrochloride
Hyoscymine Sulphate Crystals
Ethylmorphine Hydrochloride

THE HOFFMANN LAROCHE CHEMICAL WORKS, INC.

17-19-21 CLIFF STREET, NEW YORK, N. Y.

{ *Monthly Review* }

Menthol seems firm on spot with prices being quoted at $5.25 to $5.35 with business reported as being rather dull. The new crop which comes in about July and August should be somewhat easier as there seems to be quite a large carryover. The amount of left over stock has been fairly accurately estimated by one of the large importers and they expressed the opinion that an easier tone should be felt in the early fall quotations.

Japan again Exporting Iodine to Russia

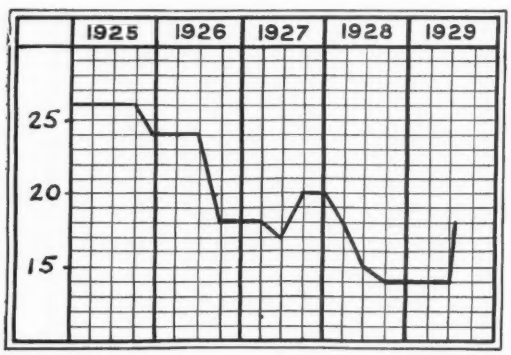
Japan's iodine exports to Soviet Russia which were interrupted for some time have revived and crude iodine to the amount of yen 150,000 has been shipped there, says Drug Markets correspondent in Tokyo. Japan uses seaweed ash while Chile uses the so-called mother liquid of nitrate of soda as raw material for the making of iodine. Shortly after the restoration of diplomatic relations between Japan and Russia, manufacturers have begun to export iodine to Russia and it was expected that last year's exports would be about yen 600,000 and the rise still higher in the future. But the plan failed to be realized because of Russia's decision to import commodity from Chile.

The Japan Iodine Company which has been exclusively engaged in the export of iodine has been investigating the oversea demand for iodine. It appears that Soviet Russia through British merchants has entered into a contract to purchase Chilean nitrate at 12 shillings an ounce c. i. f. a Russian port. This price is higher than the Japanese product. When this fact has become known to Russians, they have decided to buy the Japanese article once more. Several more consignments are expected to be shipped shortly.

Phenol Advanced 4c Per Pound

After a long period of shortage and strength the market for phenol has responded to these conditions in the form of an advance of 4c per pound, with very scant offerings. Manufacturers continue to be short on stocks and give no predictions as to when the situation will be relieved.

The reason for the shortage in this important commodity



Phenol Prices: Cents per Pound

lies in the fact that one large consuming manufacturer ceased manufacturing over two years ago and lived on his surplus stocks for almost two years. Other manufacturers were in possession of very large stocks and were competing very sharply with one another in an effort to

	Current Market	1929 High	1929 Low	1928 High	1928 Low
CODEINE Alk, 1 oz vials, 10 lots....oz.	.....	11.87	11.87	10.37	10.37	10.37
Hydrobromide....oz.	.....	8.92	8.92	7.42	7.92	7.42
Hydrochloride....oz.	.....	10.87	10.87	9.37	9.87	9.37
Nitrate, oz vl 10 oz lots....oz.	.....	9.80	9.80	8.30	8.80	8.30
Phosp. oz vl, 10 oz lots....oz.	.....	9.42	9.42	7.92	8.42	7.92
Salicylate....oz.	.....	8.25	8.25	6.75	7.25	6.75
Sulfate, oz vl, 10 oz lots...oz.	.....	9.67	9.67	8.42	8.92	8.42
COD LIVER OIL Nor., 30 gal bbls....bbl.	29.00	30.00	36.00	22.00	48.00	38.00
Newfoundland....bbl.	.....	46.00	46.00	46.00	46.00	46.00
Colchicino Alk, USP, 1 oz vl.oz.	.....	20.00	20.00	20.00	20.00	20.00
Salicylate, 1 oz vls....oz.	.....	35.50	35.50	35.50	35.50	35.50
Collodion, USP, 30 lb drs...lb.	.....	.23	.23	.23	.23	.23
Corn Syrup, 42 deg. 50 gal bbls. ....100 lb.	3.91	4.16	4.16	3.91	4.51	3.31
Cream Tartar, USP, 300 lb bbls ....lb.	.27½	.27½	.28	.26½	.28	.26
Imp. powd. 224 lb bbls....lb.	.25½	.25½	.27	.25½	.27½	.25½
Creosote, USP, 42 lb cbys....lb.	.40	.42	.42	.40	.42	.40
Carbonate, 150 lb.....lb.	1.50	1.60	1.60	1.50	1.60	1.50
Cresol, USP, 400 lb drums...lb.	.....	.20	.20	.20	.20	.20
500 lb drums.....lb.	.....	.20	.20	.20	.20	.20
DIGITALIN Pure, 1 oz vial.oz.	15.00	15.50	15.50	15.00	15.50	15.00
Dover's Powder, USP, 5 lb tin ....lb.	2.45	2.50	2.50	2.45	2.50	2.45
Duboisine Sulfate, 1 oz vl....oz.	.....	30.07	30.07	30.07	30.07	30.07
Emetine Alk, 15 gr vial.....oz.	.....	.85	.85	.85	.85	.85
Hydrochloride, USP, 1 oz vl ....oz.	35.00	36.00	36.00	35.00	36.00	35.00
15 grain vials.....oz.	2.50	2.70	2.70	2.50	2.70	2.50
Epsom Salts, USP, 200 lb bbls ....100 lb.	2.25	2.50	2.50	2.25	2.50	1.85
Imp. 100 lb bbls.....100 lb.	1.95	2.00	2.00	1.95	2.00	1.95
Ergotin Bonjean, 1 lb jars...lb.	18.50	19.00	19.00	18.50	21.00	15.25
Eserine Alk, 1 oz vials.....oz.	.....	50.00	50.00	50.00	40.00	40.00
Salicylate, 1 oz vials.....oz.	.....	40.00	40.00	40.00	40.00	40.00
Sulfate, USP, VIII 1 oz vials ....oz.	.....	40.00	40.00	40.00	40.00	40.00
ETHER, USP, 55 lb drums..lb.	.....	.18	.18	.18	.16	.15
Anaesthesia, 55 lb drums..lb.	.....	.23	.23	.23	.21	.20
Nitrous, 1 lb bot.....lb.	.....	.80	.98	.80	.95	.95
Ethyl Chloride, 200 lb bot...lb.	.22	.24	.24	.22	.25	.22
Ethyl Iodide, 5 lb bot.....lb.	.....	6.25	6.25	6.25	6.25	6.25
Formaldehyde, USP, 100 lb cbys lc-l wks.....lb.	.10½	.10½	.10½	.09½	.10	.07½
Gall Extract.....lb.	.20	.21	.21	.20	.21	.20
Gelatin, USP, Silver, 100 lb cs ....lb.	.55	.60	.60	.55	.60	.55
Pure Food, 50 lb bbls.....lb.	.53	.55	.55	.53	.55	.53
GLANDULAR SUBSTANCES						
Duodenal Substance, 1 lb lots	.....	5.50	.....	.....	.....	.....
Liver Substance (Hepatic) 1 lb lots.....	.....	4.50	.....	.....	.....	.....
Orchic Substance (Testicular)	.....	4.75	.....	.....	.....	.....
Ovarian Substance, whole, 1 lb lots.....	.....	26.00	.....	.....	.....	.....
Ovarian Residue, 1 lb lots....	.....	20.00	.....	.....	.....	.....
Pituitary Substance, whole 1 lb lots.....	.....	40.00	.....	.....	.....	.....
Pituitary Substance, Anterior Lobe, 1 lb lots.....	.....	27.00	.....	.....	.....	.....
Thyroid, U. S. P., 1 lb lots...	.....	4.75	.....	.....	.....	.....
Oxgall Powder, 1 lb lots.....	.....	1.35	.....	.....	.....	.....
Glucose, (grape sugar) dry 70° bags c-1 NY.....100 lb.	3.14	3.24	3.24	3.14	3.24	3.14
GLYCERIN, CP, 550 lb drums ....lb.	.14	.14½	.15½	.14¾	.19	.15
Gold Chloride, bottles.....oz.	12.00	12.50	12.50	12.00	12.50	12.00
Guaiacol, liq. USP. 100 lb cbys.....lb.	1.65	1.75	1.75	1.65	2.25	1.75
Crystals.....lb.	2.25	2.50	2.50	2.25	2.50	2.25
Benzoate, 1 lb bottles.....lb.	.....	13.00	13.00	13.00	3.00	13.00
Carbonate, 5 lb boxes.....lb.	1.70	2.50	2.50	1.70	2.50	1.70
Haarlem Oil, bot 6 gr cases...gr.	.....	3.25	3.25	3.25	3.25	3.25
Imported, 5 gross cases....gr.	.....	3.50	3.50	3.50	3.50	3.50
Halazone, 5 lb bot.....lb.	2.75	3.25	3.25	2.75	3.25	2.75
Hexamethylenetetramine, USP, 100 lb dr.....lb.	.50	.56½	.62½	.48	.62½	.52
Homatropine Hydrobrom USP. ....oz.	.....	14.50	14.50	14.50	14.50	14.50
5 oz and 1 oz vials.....oz.		13.50	13.50	13.50	13.50	13.50
Hydrastine Alk, USP, 1 oz vial ....oz.	20.50	21.00	21.00	20.50	21.00	20.50
Hydrochlide, USP, 1 oz vials ....oz.	20.50	21.00	21.00	20.50	21.00	20.50
Sulfate, 1 oz vial.....oz.	22.50	23.00	23.00	22.50	23.00	22.50
Hydrastinine Hydrochloride, USP, 15 gr vials.....oz.	.....	40.00	40.00	40.00	40.00	40.00
Hydrogen Peroxide, USP, soln 375 lb bbls.....lb.	.03¼	.04½	.04½	.03½	.05	.03½
Hyoscine Hydrobrom, USP, 1 oz vials.....oz.	.....	13.57	13.57	13.57	13.57	13.57
5 oz, 1 oz vials.....oz.	13.07	13.57	13.57	13.57	13.57	13.07
Hyoscyamine Alk, crystals, 1 oz vials.....oz.	.....	25.07	25.07	25.07	25.07	25.07
Amorphous, 1 oz vial...oz.	.....	75.07	75.07	75.07	75.07	75.07
Hydrobromide, USP, 1 oz vial ....oz.	.....	35.07	35.07	35.07	35.07	35.07
Sulfate, 1 oz vial.....oz.	.....	25.07	25.07	25.07	25.07	25.07
Hypoquinone, 100 lb kegs...lb.	.....	1.25	1.25	1.25	1.25	1.25
ICHTHYOL, tins.....lb.	4.00	4.25	4.25	4.00	4.25	4.00
Iodide Arsenous, 5 lb bot...lb.	.....	5.20	5.20	5.20	5.20	5.20
Arsenous-Mercuric soln, 5 lb bot.....lb.	.....	.26	.26	.26	.26	.26

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get their shares of the consuming demand, and also to unload the stocks.

After the large consumer ran out of supplies he came in the market for very large quantities of phenol together with other manufacturers who at that time decided to enter the manufacture of plastics due to the expiration of patents on the process of manufacture. Within a surprisingly short space of time the manufacturers found themselves almost completely out of phenol to deliver against standing contracts.

The number of manufacturers of this important commodity is comparatively small and, while production is large, the expansion of demand coupled with the discontinuance of manufacture on the part of the large consumer makes demand and supply about balanced or slightly in favor of demand.

The market is priced at 19c per pound for ordinary lots and promises to stay there for some time to come. It is not likely that the market will be priced very much higher for, should such a condition arise, the large consumer might again enter manufacture of the article. However, if the existing manufacturers cannot hope to supply the demand they might welcome such a contingency.

Potassium Iodide Market Fight

Leading manufacturers of potassium iodide reduced their quotations 25c per pound late last month. This is understood to be an effort to bring the price cutting manufacturers into line by putting the price so far under cost that those who were shading the price will be glad to maintain prices at levels that will assure all manufacturers of a fair profit.

The former price of $3.50 per pound was said to represent so close to cost that manufacturers who obtained prime raw materials could not realize a profit. However, this price was continually cut 10c per pound by some sellers.

A number of months ago when the Prohibition Department threw restrictions around the sale of gallon bottles of tincture of iodine and thereby threatened to cut off the low priced supply of raw materials for manufacture of potassium iodide, the thought was prevalent that the price would advance. It has not advanced, and legitimate manufacturers are of the opinion that all illegitimate goods have been cleaned off the market, and that the price shading sellers have been losing money in an attempt to eventually dominate the market by driving other manufacturers out of the item.

However, some manufacturers state that they bought very heavily when the Prohibition Department became more stringent since they knew that the prevailing prices were below production costs. They state that these goods are still in sellers' hands and have not yet passed into consumption. They claim that the price reduction will accomplish nothing in a market stabilization way until the large quantity of cheap material hanging over the market has passed into consumption.

Meanwhile consumers can buy iodide at a price of $3.25 per pound which is certainly well below the cost of production of any seller.

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Iodine, crude, 200 lb kegs...lb.	4.35	4.35	4.35	4.20	3.88
Resublimed, 10 lb tars....lb.	4.65	4.70	4.65	4.70	4.65
Tincture demis.....gal.	4.70	4.80	4.65	4.65	4.55
Iodoform, powd 10 lb bot...lb.	.....	6.00	6.00	6.00	6.00
Iron & Ammonium Citrate, USP, 50 lb cans.....lb.	.65	.66	.66	.64	.66	.64
Chloride, USP, lump 400 lb bbls.....lb.	.06	.08	.08	.06	.08	.05½
Citrate, USP, VIII 25 lb can .....lb.	.94	1.01	1.01	.94	1.01	.94
Hypophosphite, 5 lb cans..lb.	1.55	1.65	1.65	1.55	1.65	1.55
Iodide, 1 lb bottles.....lb.	.....	4.28	4.28	4.28	4.28	4.28
Phosphate, USP, 50 lb cans .....lb.	.....	.69	.69	.69	.69	.69
& Potas Oxalate, 250 lb bbl .....lb.	.....	.45	.45	.45	.49	.45
Pyrophosphate, USP, 50 lb .....lb.	.74	.80	.80	.74	.80	.74
& Sod Oxalate, 24 lb box...lb.	.....	.30	.30	.30	.30	.30
Sulfate, USP, crys bbls....lb.	.04½	.04	.04	.04½	.04	.04½
Ferrous dried bbls.....lb.	.....	.08	.08	.08	.08	.08
Valerate, tins.....lb.	2.75	3.00	3.00	2.75	3.00	2.75
Jalap Resin, USP lumps, 5 lb tins.....lb.	.....	4.00	4.00	4.00	4.00	4.00
Powdered, tins.....lb.	.....	4.65	4.65	4.65	4.65	4.65
Lead Acetate, USP, 100 lb kegs .....lb.	.15	.18	.18	.15	.18	.15
Iodide, USP, VIII 5 lb bot.lb.	3.20	3.40	3.40	3.20	3.40	3.20
Lecithin, 5 oz jars.....oz.	1.00	1.30	1.30	1.00	1.30	1.00
Licorice Ext Mass, cases....lb.	.14	.20	.20	.14	.20	.14½
Compound powder, bbls...lb.	.11	.13	.13	.11	.13	.11
LITHIUM CARBONATE, 250 lb bbls.....lb.	1.50	1.60	1.60	1.50	1.60	1.50
Citrate, USP, 100 lb kegs..lb.	.....	1.70	1.70	1.70	1.70	1.70
Iodide, 5 lb bottles.....lb.	.....	5.40	5.40	5.40	5.40	5.40
Lobeline Sulfate, ¼ oz vial...oz.	.....	8.75	8.75	8.75	8.75	8.75
Magnesium Carbonate, USP, 100 lb bbls.....lb.	.....	.10½	.12	.10½	.12	.12
English, oz blocks.....oz.	.16	.18	.18	.16	.18	.16
Glycerophosphate, 5 lb tins .....lb	3.20	3.25	3.25	3.20	3.25	3.20
Hypophosphite, 5 lb cans..lb	.....	1.05	1.05	1.05	1.05	1.05
Salicylate, 100 lb kegs.....lb	.....	1.10	1.10	1.10	1.10	1.10
Stearate, bbls.....lb.	.23	.25	.25	.23	.25	.23
Manganese Glycerophosphate, 5 lb tins.....lb.	2.90	3.00	3.00	2.90	3.00	2.90
Hypophosphite, USP, VIII 5 lb cans.....lb.	1.35	1.40	1.40	1.35	1.40	1.35
Iodide, 1 lb bottles.....lb.	6.40	6.65	6.65	6.40	6.65	6.40
MENTHOL, USP, 60 lb cases .....lb.	5.25	5.35	6.00	5.15	6.25	4.10
Synthetic, cases.....lb.	3.00	3.25	3.25	3.00	3.50	3.00
Mercury Metal, 75 lb flasks...fl.	.121½	.122	124.00	121.50	134.00	120.00
Bichloride, crys 25 lb box..lb.	.....	1.81	1.81	1.81	1.81	1.81
Gran powd, 100 lb kegs..lb.	.....	1.65	1.65	1.65	1.65	1.65
Bisulfate, 25 lb boxes.....lb.	.....	1.62	1.62	1.62	1.62	1.62
Blue Mass, 25 lb boxes....lb.	.....	1.03	1.03	1.03	1.03	1.03
Powd, 25 lb boxes.....lb.	.....	1.04	1.04	1.04	1.04	1.04
Blue Ointment, USP, 50%, 25 lb cans.....lb.	.....	1.29	1.29	1.29	1.29	1.29
Mild 30%, 25 lb cans....lb.	.....	.92	.92	.92	.92	.92
33 1/3% mercury.....lb.	.....	.94	.94	.94	.94	.94
Calomel, 50 lb boxes.....lb.	.....	2.05	2.05	2.05	2.05	2.05
English.....lb.	2.75	2.80	2.80	2.75	2.80	2.75
Iodide, green, 25 lb jars....lb.	.....	4.80	4.80	4.80	4.80	4.80
Red, USP, 25 lb jars...lb.	.....	4.89	4.89	4.89	4.89	4.89
Yellow, USP, VIII, 25 lb jars.....lb.	4.80	4.80	4.80	4.80	4.80	4.80
Red precip, USP, 25 lb boxes .....lb.	2.17	2.17	2.17	2.17	2.17	2.17
Powd., USP, 25 lb boxes.lb.	2.17	2.17	2.17	2.17	2.17	2.17
White precip, USP, 25 lb boxes.....lb.	.....	2.20	2.20	2.20	2.20	2.20
Powd., USP, 25 lb boxes.lb.	.....	2.25	2.25	2.25	2.25	2.25
Salicylate, 25 lb bot.....lb.	.....	2.32	2.32	2.32	2.32	2.32
With chalk, USP, 25 lb boxes .....lb.	.....	.93	.93	.93	.93	.93
Methanol, Pure 1c-1 drs....gal.	.....	.57	.57	.57	.60	.48
Methyl Salicylate, USP, 50 lb cans.....lb.	.42	.45	.45	.42	.45	.42
Methylene Blue, USP, med 5 lb cans.....lb	2.00	2.05	2.05	2.00	2.05	2.00
Milk powd, 150 lb bbls.....lb.	.14	.15	.15	.14	.15	.14
MORPHINE Alk, 5 oz tin...oz.	.....	11.35	11.35	9.85	10.15	9.85
Acetate, 5 oz tins.....oz.	.....	9.35	9.35	7.85	8.25	7.85
Hydrobromide, 5 oz tins, 10 oz lots.....oz.	.....	9.35	9.35	7.85	8.35	7.85
Hydrochloride, 5 oz tins, 10 oz lots.....oz.	.....	9.25	9.25	7.85	8.35	7.85
Ethyl Hydrochloride, 5 oz tins 10 oz lots.....oz.	.....	10.85	10.85	9.35	9.85	9.35
Sulfate, 5 oz tins, 10 oz lots .....oz.	.....	8.85	8.85	7.85	8.35	7.85
Naphthalene Flake, 175 lb bbls wks.....lb.	.04½	.05	.05	.04½	.05	.04½
Balls, 250 lb bbls wks.....lb.	.05½	.06	.06	.05½	.06	.05½
Oil Mineral White, 50 ga bbls bbls 80-85 vis.....gal.	.62	.67	.67	.60	.67	.60
85-90 vis.....gal.	.65	.70	.70	.65	.70	.65
125-130 vis.....gal.	.82	.92	.92	.65	.92	.70
290 vis.....gal.	1.00	1.10	1.10	1.00	1.10	1.00
Russian 110-115 vis.....gal.	.70	.75	.75	.70	.75	.70
150-155 vis.....gal.	.67	.73	.80	.67	.80	.67
325-335 vis.....gal.	.75	.80	.90	.75	.95	.80
Oxgall, Purified, 5 lb bot....lb.	1.75	2.50	2.50	1.75	2.50	1.75
USP, 5 lb bot.....lb.	2.00	2.50	2.50	2.00	2.50	2.00
Oxyquinoline Sulfate, tins...lb.	8.50	9.25	9.25	8.50	9.25	8.50

Chemicals

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Opium Derivatives Advanced

An advance in the price of morphine and codeine alkaloids and other salts was announced July 9 by manufacturers. The reason given was the shortage of opium in the country.

Morphine alkaloid was marked up $1.00 per oz. to $8.85 per oz. for 5 oz. lots. Morphine ethyl hydrochloride was advanced $1.50 per oz. to $10.85 per oz. Other morphine salts were advanced about $1.50 per oz. on each item.

Codeine alkaloid is now priced at $11.87 per oz., an advance $1.50 per oz. Codeine sulfate is now quoted at $9.67 per oz., an advance of $1.25 per oz. Codeine phosfate is higher by $1.50 per oz., now being quoted at $9.42 per oz. Other codeine salts were advanced about $1.50 per oz.

Mercury Buying at High Mark

Marked activity in the market for mercury ushered in the month of July and during the first week of the month leading importers report sales equal to those of the entire month of June. A total of over 1,000 flasks was sold during the first three days of the month. There is reported to be not over 500 flasks available on spot and there are inquiries in the market for that amount.

Despite this activity the price has not advanced and in fact is slightly lower at the moment. The sales this month have taken place at $121.50 @ $122.00 per flask. However, the feeling that this heavy buying will force the market up is general.

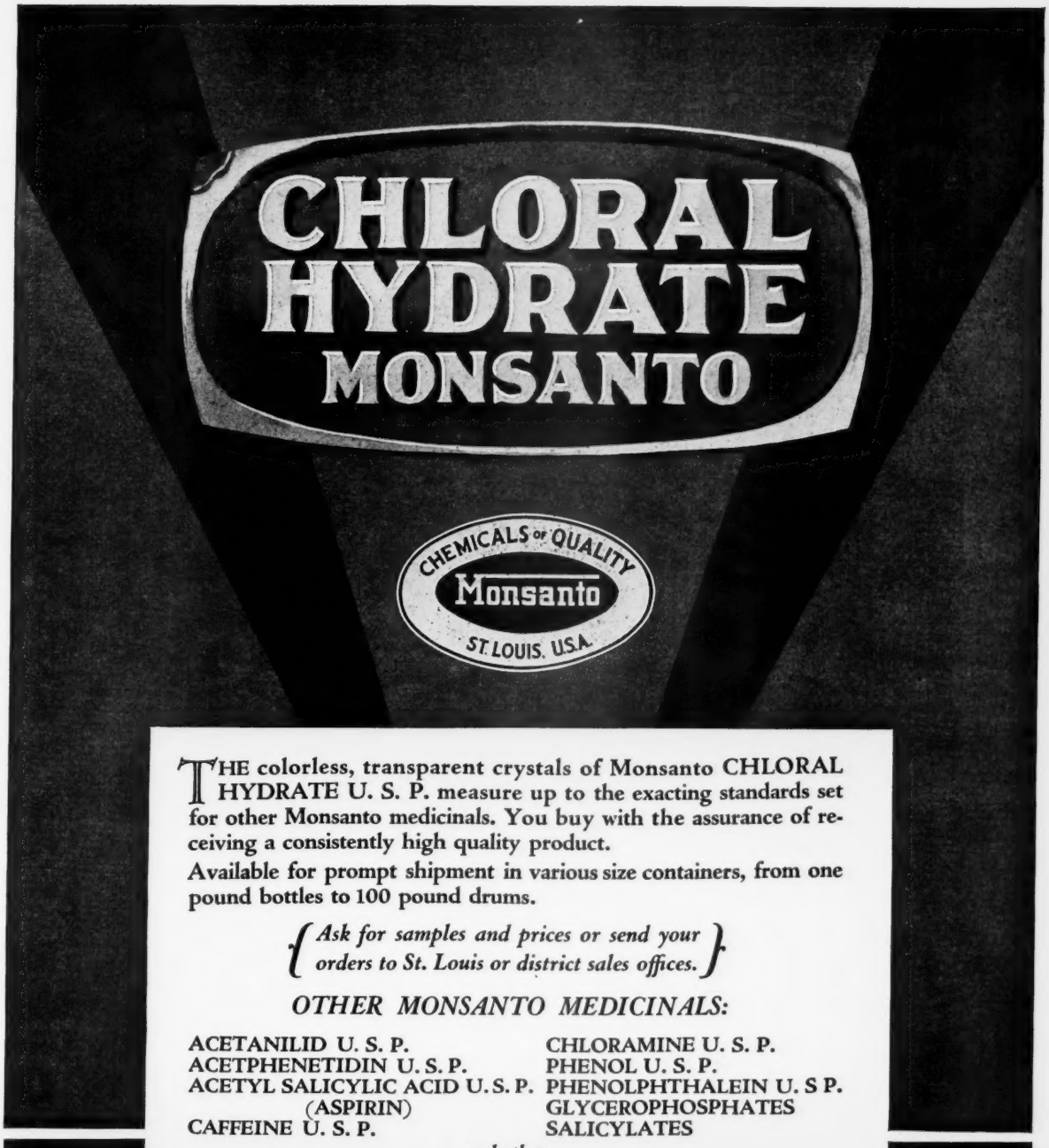
Buying has not been restricted to any one group of consumers, but all types of users of mercury have been actively in the market. The opinion is given that the activity was caused merely by buyers being at the end of their stocks after waiting as long as they could for the market to break.

As a matter of fact the world position of quicksilver is statistically weak, yet much higher prices may be imminent due to the fact that the stocks of the English speculators are fast becoming depleted and the Monopoly of Spanish and Italian mines might be in complete control before another month has past. The Monopoly if said to have a price in mind that will figure out to approximately $145.00 per flask duty paid in this country. Therefore, a rapid advance in mercury prices in the near future would not be surprising. The only fact that may offset this possibility is that the Monopoly is in possession of 104,000 flasks of mercury at the mines—the largest stock of the metal that the world has ever seen.

Spain Exports Less Essential Oils

Exports of all essential oils from Spain to the United States during 1927 and 1928 were valued at $236,000 and $198,000, respectively. Among the principal essential oils exported from Spain are spike, origanum, pennyroyal, thyme, rue, aspic, eucalyptus, juniper, woodtar, sweet fennel, neroli, majoram, labdanum, lavender, rosemary, tangerine, and orange. Malaga accounts for over 20 per cent. of Spain's essential oil exports and smaller quantities are shipped from Alicante. Exports of orange and of spike lavender oil from Alicante to the United States for the first quarter of 1929 amounted to 1,460 pounds, valued at $3,861, and 2,238 pounds, valued at $1,622.

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Pancreatin, USP, 100 lb....lb.	.....	1.90	1.90	1.90	.....	.....
Paraffin, refd, 200 lb cs slabs 118-120 deg MP.....lb.	.08	.09	.09	.08	.09	.08
128-132 deg MP.....lb.	.07½	.07¾	.07¼	.07½	.07¼	.07½
Para-Aldehyde, USP, 100 gal drums.....lb.	.67	.77	.77	.67	.77	.67
Pepsin, USP, 100 lbs. 1:3000.lb.	.....	2.25	2.25	2.25	2.50	2.50
100 lbs. 1:6000.....lb.	.....	4.00	4.00	4.00	5.00	5.00
100 lbs. 1:10000.....lb.	.....	6.50	6.50	6.50	8.35	8.35
Peptone, powd, 5 lb bot.....lb.	.....	.....	.....	.....	.....	.....
Petrolatum, Lily White, USP 400 lb bbls.....lb.	.08	.09	.09	.08	.10	.09
Snow White, USP, 400 lb bbls.....lb.	.09½	.10	.10	.09½	.13½	.11½
PHENOLPHTHALEIN, USP, 100 lb drums.....lb.	1.10	1.20	1.20	1.10	1.20	1.10
5 lb cans 100 lb lots..lb.	1.23	1.30	1.30	1.23	1.30	1.23
Pilocarpine Hydrochloride, USP, 1 oz vials 25 oz lots .....oz.	.....	3.25	3.25	3.25	3.25	3.25
Nitrate, 25 oz lots.....oz.	.....	3.25	3.25	3.25	3.25	3.25
Single ounce.....oz.	.....	3.50	3.50	3.50	3.50	3.50
Alkaloid, 15 gr vials.....vl.	.....	.75	.75	.75	.75	.75
Piperazine Hydrate, 1 lb bot.lb.	.....	15.00	15.00	15.00	15.00	15.00
Piperadine, 25 oz bottles.....lb.	.....	8.00	8.00	8.00	8.00	8.00
Popodhyllin 5 lb bottles.....lb.	4.35	4.50	4.50	4.35	4.50	4.35
Potassium Acetate, USP, 100 lb kegs.....lb.	.29	.30	.30	.29	.30	.29
Bicarb, USP, crys 320 lb bbls .....lb.	.13	.13½	.13½	.08½	.09	.08½
Bromide, USP, crys 100 lb cs .....lb.	.42	.43	.40	.39	.43	.42
Citrate, USP, 50 lb bbl....lb.	.51	.53	.55	.51	.55	.51
Guaiacol Sulfonate.....lb.	1.95	2.25	2.25	1.95	2.25	1.95
Hypophosphite, 10 lb cans.lb.	.80	.85	.85	.80	.85	.80
Iodide, USP, 100 lb cases..lb.	3.25	3.30	3.55	3.25	3.80	3.25
Lactophosphate, 4 oz bot..lb.	.....	.90	.90	.90	.90	.90
Permangan, USP, crys, 100 lb drs wks.....lb.	.15	.15½	.15½	.15	.16½	.14½
Phosphate dibasic pure, kegs .....lb.	.....	.49	.49	.49	.49	.49
Salicylate, 25 lb cans....lb.	.....	1.18	1.18	1.18	1.18	1.18
Sulfate, USP, VIII, 100 lb kegs.....lb.	.13	.15	.15	.13	.15	.13
Sulfocyanide, CP 15 lb jars lb.	.....	.50	.50	.50	.50	.50
Tartrate, CP, tins.....lb.	.....	.65	.65	.65	.65	.65
Pyrogallol, USP, see Acid Pyrogallic.....	.....	.....	.....	.....	.....	.....
Quinidine Alk, 100 oz tins...oz.	.70	.75	.75	.70	.75	.70
Sulfate, 100 oz tins.....oz.	.....	.50	.50	.50	.50	.50
QUININE SULFATE, USP, 100 oz tins.....oz.	.....	.40	.40	.40	.40	.40
1 oz tins, 100 oz lots....oz.	.....	.47	.47	.47	.47	.47
Dutch, 100 oz tins.....oz.	.....	.40	.40	.40	.40	.40
Java, 100 oz. tins.....oz.	.....	.40	.40	.40	.40	.40
Japanese 100 oz tins.....oz.	.....	.40	.40	.40	.40	.40
Acetate.....oz.	.....	.78	.78	.78	.78	.78
Arsenate.....oz.	.....	.78	.78	.78	.78	.78
Benzoate.....oz.	.....	.78	.78	.78	.78	.78
Bisulfate, USP.....oz.	.....	.40	.40	.40	.40	.40
Resale.....oz.	.37	.39	.39	.37	.39	.37
Citrate.....oz.	.....	.51	.51	.51	.51	.51
Dicarbonate, 1 oz tins....oz.	.....	2.56	2.56	2.56	2.56	2.56
Dihydrobromide.....oz.	.....	.54	.54	.54	.54	.54
Dihydrochloride, USP....oz.	.....	.54	.54	.54	.54	.54
Ethyl Carbonate, 16 oz tins .....oz.	.....	.58	.58	.58	.58	.58
Ferrocyanide.....oz.	.....	.78	.78	.78	.78	.78
Formate.....oz.	.....	.73	.73	.73	.73	.73
Glycerophosphate.....oz.	.....	.80	.80	.80	.80	.80
Hydrobromide, USP.....oz.	.....	.50	.50	.50	.50	.50
Hydrochlorosulfate.....oz.	.....	.54	.54	.54	.54	.54
Hydrochloride & Urea, USP .....oz.	.....	.74	.74	.74	.74	.74
Hypophosphite.....oz.	...	.70	.70	.70	.70	.70
Lactate.....oz.	.....	.66	.66	.66	.66	.66
Phenolsulfonate.....oz.	.....	.78	.78	.78	.78	.78
Phosphate.....oz.	.....	.62	.62	.62	.62	.62
Salicylate, USP.....oz.	.....	.52	.52	.52	.52	.52
Tannate, USP.....oz.	.....	.41	.41	.41	.41	.41
Tartrate.....oz.	.....	.78	.78	.78	.78	.78
Valerate.....oz.	.....	.78	.78	.78	.78	.78
& Urea Hydrochloride, USP .....oz.	.....	.88	.88	.88	.88	.88
Rennet, N. F. 5 lb 1:25,000...lb.	2.95	3.50	3.50	2.95	3.50	2.95
Resorcinol, USP, 25 lb cans..lb.	1.60	1.65	1.75	1.65	2.00	1.70
Rochelle Salt, USP, 225 lb bbl .....lb.	.23	.23½	.23½	.23	.23½	.23
Imp. USP, 300 lb bbls.....lb	.....	.23	.23	.23	.23	.23
Rock Sugar, 5 lb boxes.....lb.	.....	.15	.15	.15	.15	.15
Saccharin, USP, 10 lb cans...lb.	1.70	1.80	1.80	1.70	1.80	1.70
USP, Soluble, 10 lb cans...lb.	1.75	1.85	1.85	1.75	1.85	1.75
Salicin, USP.....lb.	.....	4.86	4.86	4.86	4.86	4.86
SALOL, USP, 100 lb drums..lb.	.....	.90	.90	.90	.90	.90
Saltpetre, powd, bbls wks....lb.	.06½	.08½	.08½	.06½	.08½	.06½
Santonin, USP, bulk.....lb.	.....	129.50	129.50	129.50	145.00	129.50
Saponin, refined.....lb.	1.30	1.50	1.50	1.30	1.50	1.30
Siedlitz Mixture, 250 lb bb..lb.	.....	.....	.....	.....	.....	.....
Silver Metal, American.....oz.	.....	.57½	.57½	.57½	.60¼	.57½
Iodide, 16 oz lots.....oz.	.....	.69	.69	.69	.69	.69
Nitrate, 100 oz bottles....oz.	.40½	.42½	.42½	.40½	.45	.40½
Nucleinate, bulk.....oz.	.....	.37	.37	.37	.37	.37
Proteinate.....oz.	.....	.32	.32	.32	.32	.32
Soap Castile, 50 lb boxes....lb.	.....	.25	.25	.25	.25	.25
USP, powd, 250 lb bbls....lb.	.28	.30	.30	.28	.30	.28
USP, green, 450 lb bbls....lb	.07½	.07½	.07½	.07½	.07½	.07½



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FINE AND MEDICINAL CHEMICALS ⟷ TECHNICAL CHEMICALS ⟷ INTERMEDIATES

{ Monthly Review }

French Essential Oil Trade

Export of Essential and distilled oils for the first quarter of 1929 showed a considerable gain over the corresponding quarter of 1928, especially in lavender, orange flower or neroli, rose and tuberose exports were about the same, according to a report from Vice Consul J. R. Robinson, Nice, France, dated May 7. Prices are higher as stocks are said to be diminishing.

Exports of the most important essential and distilled oils from France to the United States through Nice, which accounts for the bulk of the trade for the first quarter of 1928 and 1929 are as follows:

	1928		1929	
Articles	*Pounds*	*Value*	*Pounds*	*Value*
Lavender	26,915	$84,200	40,462	$124,254
Orange flower or Neroli	77	5,476	78	14,307
Rose	172	7,633	188	16,437
Tuberose	26	3,083	28	2,853

As the orange flower harvest of the Nice Department is small, the perfume industry is importing orange blossoms from the Italian Riviera and distilled essence from Algeria and Tunisia. A sharp advance in price has taken place and another is looked for as there are no stocks on hand in Grasse.

It is also believed that the lavender crop will be short this coming season on account of the dry summer of 1928, when the plants on the high plateaus were all burned up. The rain and snow storms of January and February were merely local and extended inland only a distance of 40 kilometers from the sea. On the higher ranges no rain has fallen since December, while much damage to plants was caused by the mistral wind. The quotations for lavender have not advanced, but prices are said to tighten materially whenever a buyer appears on the market.

Orange Oil Continues Easy

Further slight reductions in the prices of the various grades of orange oil have occurred during the past month. The situation is virtually unchanged with the American pressers in possession of exceedingly large stocks of oil, and the Italian oil following every reduction announced by the American sellers.

The real weakness of the market is clearly indicated by the fact that despite plenty of real warm weather and therefore as heavy demand as can be expected at any time, the market continues to decline. Of course the declines are slight, but if the weather had been cold as during the past two years, the decline would have been much sharper.

While the market is much more favorable to buyers than it has been recently, it is still well above normal levels and will bear close watching. The Italian oil and the American oil will be available for the Summer demand, and the new Italian oil starts to come through in late Fall. At that time the market probably will continue to decline until January when the lowest prices are generally in force.

It appears from all indications that the market is in the buyers' favor, and buying for this season should be done in a small way unless some indications are given that would lead the buyer to believe that the market will be higher next month or next Fall.

	Current Market	1929 High	1929 Low	1928 High	1928 Low
SODIUM BENZOATE, USP, 100 lb bbls. . . . lb.	.45	.49	.49	.45	.55	.50
Bromide, USP, 100 lb kegs. lb.	.42	.43	.43	.42	.43	.42
Cacodylate, USP, 25 lb bot . . . . lb.	4.75	5.90	5.90	4.75	6.10	4.75
Citrate, USP, X 50 lb kegs. lb.	.45	.47	.47	.45	.47	.45
USP VIII, 50 lb kegs . . . lb.	.38	.40	.40	.38	.40	.38
Glycerophosphate, USP, crys 25 lb cans . . . . lb.	1.40	1.55	1.55	1.40	1.55	1.40
Powder, 25 lb tins . . . . lb.	1.45	1.60	1.60	1.45	1.60	1.45
Soln, USP, 25 lb tins . . . lb.	1.05	1.20	1.20	1.05	1.20	1.05
Hypophosphite, USP, 25 lb cans . . . . lb.	.70	.75	.75	.70	.75	.70
Iodide, USP, 25 lb jars . . . lb.	4.25	4.30	4.30	4.25	4.30	4.25
Phosphate (Mono-Sodium), 100 lb kegs . . . . lb.	.30	.31	.31	.30	.31	.30
Di-Sodium USP, granular, 275 lb bbls . . . . lb.	.07½	.08	.08	.07½	.08	.07½
Pyrophosphate, 100 lb kegs . . . . lb.	.....	.29	.29	.29	.29	.29
Salicylate, 100 lb kegs . . . . lb.	.....	.47	.47	.47	.47	.47
Silicate, 41° drums . . . . lb.	.....	.01½	.01½	.01½	.01½	.01½
47° drums . . . . drm.	.....	12.00	12.00	12.00	12.00	12.00
Sulfocarbolate, USP, 100 lb kegs . . . . lb.	.....	.31	.31	.31	.31	.31
Sulfocyanate, CP crys, jars included . . . . lb.	.....	.60	.60	.60	.60	.60
Spartein Sulfate, USP, 25 oz bulk . . . . oz.	.65	.70	.70	.60	.70	.60
Single oz vial . . . . oz.	.77	.90	.90	.77	.90	.77
Starch Rice, 140 lb bags . . . . lb.	.09	.10	.10	.09	.10	.09
STRONTIUM BROMIDE USP, 50 lb kegs . . . . lb.	.51	.52	.52	.51	.52	.51
Carb, 100 lb kegs wks . . . . lb.	.....	.20	.20	.20	.20	.20
Iodide, USP, 25 lb jars . . . . lb.	.....	4.00	4.00	4.00	4.00	4.00
Lactate, kegs . . . . lb.	.90	1.10	1.10	.90	1.10	.90
Nitrate, 600 lb bbls NY . . lb.	.08	.08½	.08½	.08	.08½	.08
Imp. bbls NY . . . . lb.	.08	.08½	.08½	.08	.08½	.08
Salicylate, USP, 100 lb keg lb.	.....	1.10	1.10	1.10	1.10	1.10
Strophanthin, USP, 1 oz vial. oz.	.....	19.00	19.00	19.00	19.00	19.00
Crystals . . . . lb.	.....	75.00	75.00	75.00	75.00	75.00
Strychnine Alk, USP crys, 100 oz tins . . . . oz.	.....	.66	.66	.66	.66	.56
Powdered . . . . oz.	.....	.56	.56	.56	.56	.46
Acetate . . . . oz.	.....	.65	.65	.65	.65	.55
Arsenate, 25 oz cans . . . . oz.	.....	.65	.65	.65	.65	.55
Glycerophosphite, USP, . . . oz.	.....	.65	.65	.65	.65	.55
Hydrobromide . . . . oz.	.....	.65	.65	.65	.65	.55
Hydrochloride . . . . oz.	.....	.65	.65	.65	.65	.55
Hypophosphite . . . . oz.	.....	.75	.75	.75	.75	.65
Nitrate, USP . . . . oz.	.55	.72	.72	.55	.72	.52
Phosphate . . . . oz.	.....	.65	.65	.65	.65	.55
Sulfate, USP, crys, powd . . oz.	.46	.56	.56	.46	.56	.38
Sugar, refined, 275 lb bbl 100 lb.	5.80	5.90	5.90	5.80	5.90	5.80
Milk, USP, 200 lb bbls . . lb.	.18	.20	.20	.18	.20	.18
Sulfonethylmethane, USP, 10 lb boxes . . . . lb.	3.85	4.05	4.05	3.85	4.05	3.85
Sulonmethane, USP, 10 lb box . . . . lb.	2.65	3.85	3.85	2.65	3.85	2.65
Sulfur flwrs, washed, USP, 125 lb bbl . . . . lb.	.....	.06	.06	.06	.06	.06
Iodide, USP, VIII, 5 lb bot lb.	.....	4.55	4.55	4.55	4.55	4.55
TARTAR EMETIC, USP, 300 lb bbls . . . . lb.	.29	.31	.31	.29	.36	.32½
Terebene, tins . . . . lb.	.....	.85	.85	.85	.85	.85
Terpin Hydrate, USP, 100 lb kegs . . . . lb.	.40	.42	.42	.40	.47	.40
Theobromine Alk, 5 lb cans . . lb.	1.90	2.25	2.25	1.90	2.25	1.90
Sod. Salicylate, 1 lb bot . . . lb.	.....	2.10	2.10	2.10	2.10	2.10
Sod. Benzoate, 1 oz vials . . oz.	.....	1.00	1.00	1.00	1.00	1.00
Thymol, USP, 25 lb tins . . . . lb.	2.55	2.70	2.70	2.25	2.75	2.25
Iodide kegs . . . . lb.	6.00	7.00	7.00	6.00	7.00	6.50
Veratrine Alkaloid . . . . oz.	.....	2.25	2.25	2.25	2.25	2.25
Sulfate, 1 oz vials . . . . oz.	.....	2.25	2.25	2.25	2.25	2.25
Witch Hazel Ext., 50 gal bbl . . . . gal.	.80	1.00	1.00	.80	1.00	.80
Zinc Carb, USP, 100 lb keg . . lb.	.28	.31	.31	.28	.31	.28
Chloride, USP, 25 jars ex . . lb.	.24	.29	.29	.24	.29	.24
Iodide, 5 lb bottles . . . . lb.	.....	5.22	5.22	5.22	5.22	5.22
Oxide, USP, 100 lb bbls . . . lb.	.16½	.17½	.18	.16½	.18	.17
Stearate, USP, 50 lb bbl . . lb.	.24	.26	.26	.24	.26	.22
Sulfate, USP, 100 lb bbl . . lb.	.08	.09	.09	.08	.09	.08
Sulfocarbolate, 100 lb kegs . . lb.	.23	.29	.29	.23	.29	.29

Natural Derivatives

Anethol, 2 lb bot . . . . lb.	1.25	1.30	1.30	1.25	1.30	1.25
Borneol, 1 lb bot . . . . lb.	2.40	2.50	2.50	2.40	2.60	2.40
Carvol, 5 lb bot . . . . lb.	3.50	3.60	3.60	3.50	2.85	3.50
Citral, 25 lb cans . . . . lb.	2.70	2.75	2.75	2.70	2.75	2.70
Citronellal 1 lb bot . . . . lb.	2.70	2.75	2.75	2.70	3.25	2.70
Eucalyptol, USP, 50 lb cans . . lb.	1.00	1.05	1.05	1.00	1.05	1.00
Eugenol, USP, 25 lb cans . . . lb.	2.70	2.75	2.75	2.70	2.90	2.70
Geraniol, domestic, 50 lb cases . . . . lb.	2.50	2.70	2.70	2.50	2.70	2.50
Imported, 5 lb bot . . . . lb.	2.90	3.10	3.10	2.90	3.10	2.90
Iso-Eugenol, 1 lb bot . . . . lb.	3.75	3.80	3.80	3.75	4.50	3.75
Imported, 1 lb bot . . . . lb.	3.70	3.80	3.80	3.70	3.80	3.70
Linalol from Bois de Rose, 5 lb bot . . . . lb.	3.20	3.25	3.25	3.20	3.25	3.00
Rhodinol, 1 lb bot . . . . lb.	7.50	7.75	7.75	7.50	7.75	6.00
Saffrol, drums . . . . lb.	.....	.27	.27	.27	.27	.27
60 lb cans . . . . lb.	.....	.29	.29	.29	.29	.29

Have You Written to Washington?

The Senate Committee is now meeting in Washington. They will receive all protests against the new raise in the Lanoline tariff. Have you written to Washington? You owe it to your product.

YOU may recall that on January 8th the Domestic producers asked for an advance in duty on Lanoline from 1c to 8c per pound. The House of Representatives has proposed in the bill which they have put before the Senate that the duty be raised from 1c to 3c, while the producers are now asking that it be raised from 3c as in the present draft to 6c per pound.

The Tariff Bill as presented by the House of Representatives proposes the following duties:

Common Degras.....1c per pound
Refined Woolgrease.... 2c per pound
Lanoline.....3c per pound

The Tariff now asked for by Domestic producers and refiners is:

Common Degras.....2c per pound
Refined Woolgrease.....4c per pound
Lanoline.....6c per pound

Will your product be able to stand this advance?

The Common Degras produced in this country would not be sufficient to supply the demand for Lanoline and take care of the other uses of the raw material.

The Senate Committee is now meeting in Washington and will receive all protests.

Any further particulars will be gladly given by

Pfaltz & Bauer, Inc.
300 PEARL STREET·NEW YORK
Sole American Agents for "Golden Fleece" Lanoline

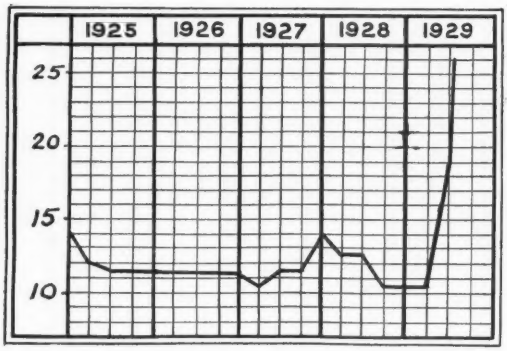
Monthly Review

Camphor Oil to be Processed in Japan

Camphor oil is decidedly strong in tone with prices again advancing to new highs for some time. White camphor oil is now quoted at 26c to 29c per lb. with very little or no spot stocks available. The table below giving monthly price range from the first of the current year shows the rapid increment in the value of this commodity.5

Month	*Price and range as to quantity*
January	.10½ to .11 per pound
February	.10½ " .11 " "
March	.12 " .14 " "
April	.15 " .18 " "
May	.19 " .22 " "
June	.19 " .22 " "
July	.26 " .29 " "

The scarcity of camphor oil here is entirely due to the situation abroad. The Japanese government, which has a monopoly on the camphor production of the country, has been endeavoring to encourage and stimulate the essential oil industry in Japan. In order to accomplish this the Monopoly Bureau has entered into an agreement to sell



**White Camphor Oil Prices:
Cents per Pound**

the entire output of caphor oil to two of the largest essential oil houses in Japan. Under this arrangement there are absolutely no stocks abroad for export to this counor anywhere else.

The idea in the Japanese mind is to try and introduce safrol, made from brown camphor oil, of Japanese manufacture, into the foreign markets. Samples of safrol have already been sent here with the understanding that the trade is to be thoroughly canvassed to ascertain its attitude toward this commodity. This whole proposition, however, is in the nature of an experiment. The duty on safrol is 45% ad valorem, so that it is problematical whether the plan is feasible.

However, if the plan works out, manufacture of products made from brown camphor oil will be conducted entirely in Japan in exactly the same manner as crude camphor is entirely refined in that country. Since Japan has the raw material from which a number of essential oil products can be made, she is going to keep that raw material in the country and ship out only the finished products.

Although the plan is only in the experimental stage and may be abandoned if it fails after a thorough test, during

Synthetic Aromatics

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Acetophenene, CP, 1 lb bot..lb.	3.50	3.65	3.65	3.50	3.75	3.50
Aldehyde, C 8 (Otcyl) 1 lb bot .....lb.	.....	55.00	55.00	55.00	55.00	55.00
C 7, 1 lb bot.....lb.	4.50	5.50	5.50	4.50	5.50	4.50
C 9 (Nomyl), 1 lb bot....lb.	.....	140.00	140.00	140.00	140.00	140.00
C 10 (Decyl), 1 lb bot....ib.	.....	48.00	48.00	48.00	48.00	48.00
C 14, 1 lb bot.....lb.	22.50	25.00	25.00	22.50	25.00	22.50
C 16, 1 lb bot.....lb.	31.00	32.00	32.00	31.00	80.00	31.00
Aubepine, see Anisic Aldehyde						
AMYL ACETATE, pure, 5 gal cans.....gal.	4.75	5.50	5.50	4.75	5.50	4.75
Butyrate, 1 lb bot.....lb.	1.70	1.75	1.75	1.70	1.90	1.70
Butyrate, 5 lb bot.....lb.	.....	1.75	1.75	1.75	1.75	1.75
Cinnamate, 5 lb bot.....lb.	9.50	9.75	9.75	9.50	9.75	9.50
Formate, 1 lb bot.....lb.	.....	1.90	1.90	1.90	1.90	1.90
Formate, 5 lb bot.....lb.	.....	1.75	1.75	1.75	1.75	1.75
Phenyl Acetate, 1 lb bot...lb.	4.50	5.00	5.00	4.50	5.00	4.50
Salicylate, 100 lb cbys.....lb.	1.25	1.30	1.30	1.25	1.30	1.25
Imported.....lb.	2.25	2.50	2.50	2.25	2.50	2.25
Anisic Aldehyde, 1 lb bot....lb.	3.00	3.25	3.25	3.00	3.25	3.00
Benzaldehyde, USP, 40 lb cbys .....lb.	.....	.....	.....	.....	.....	.....
50 lb cbys.....lb.	1.25	1.35	1.35	1.25	1.35	1.25
FFC, 40 lb cbys.....lb.	1.35	1.45	1.45	1.35	1.45	1.35
Benzoic Ether, see Ethyl Benzoate.....						
Benzophenone, 1 lb bot.....lb.	4.50	5.00	5.00	4.50	5.00	4.50
Benzyl Acetate, 100 lb cbys..lb.	.90	1.10	1.10	.90	1.10	.90
Alcohol, 5 lb bot.....lb.	1.25	1.35	1.35	1.25	1.35	1.25
Benzoate, 5 lb bot.....lb.	1.25	1.35	1.35	1.25	1.35	1.25
BENZYL BENZOATE.....	1.35	1.40	1.40	1.35	1.40	1.35
Medicinal, FFC.....lb.	.....	1.40	1.40	1.40	1.40	1.40
Buytrate, CP, 1 lb bot....lb.	9.25	9.50	9.50	9.25	9.50	9.25
Cinnamate, 1½ bot.....lb.	9.25	9.50	9.50	9.25	9.50	9.25
Formate, 1 lb bot.....lb.	3.15	3.25	3.25	3.15	3.75	3.15
Propionate, 1 lb bot.....lb.	3.60	3.75	3.75	3.60	3.75	3.60
Succinate, 1 lb bot.....lb.	5.25	5.50	5.50	5.25	5.50	5.25
Valerate, 5 lb bot.....lb.	3.00	3.25	3.25	3.00	3.25	3.00
Bornyl Acetate, 1 lb bot....lb.	2.90	3.00	3.00	2.90	3.25	2.90
Bromstyrol, 25 lb cases.....lb.	4.10	4.25	4.25	4.10	5.00	4.10
Butyl Anthranilate dom, 1 lb bot.....lb.						
Butyric Ether, see Ethyl Butyrate.....						
Cinnamic Acid, 5 lb cans....lb.	3.25	3.50	3.50	3.25	3.50	3.25
Alcohol liquid, 1 lb bot...lb.	3.25	3.35	3.35	3.25	3.50	3.25
Crystallizable.....lb.	7.00	8.00	8.00	7.00	8.00	7.00
Aldehyde.....lb.	2.25	2.50	2.50	2.25	2.50	2.25
Imported, 1 lb bot.....lb.	7.75	9.00	9.00	7.75	9.00	7.75
Citronelyl Acetate, 1 lb bot..lb.	7.75	8.00	8.00	7.75	8.00	7.75
Coumarin, 25 lb cans.....lb.	3.50	4.00	4.00	3.50	4.00	3.50
DECYL ALCOHOL.....lb.	25.00	28.00	28.00	25.00	28.00	25.00
Diethyl Phthlate see Chemicals						
Diphenyloxide, 25 lb tins....lb.	1.00	1.15	1.15	1.00	1.15	1.00
Diphenyl Methane.....lb.	1.50	1.75	1.75	1.50	1.75	1.50
Duodecyl Alcohol.....lb.	20.00	22.00	22.00	20.00	22.00	20.00
Ethyl Acetate, pure, 5 lb bot..lb.	.45	.50	.50	.45	.50	.45
Benzoate, 5 lb bot.....lb.	1.50	1.75	1.75	1.50	1.75	1.50
Ethyl Butyrate, 5 lb bot....lb.	1.80	2.00	2.00	1.80	2.00	1.80
Caproate, 1 lb bot.....lb.	3.25	3.50	3.50	3.25	3.50	3.25
Cinnamate, 1 lb bot.....lb.	4.00	4.50	4.50	4.00	4.50	4.00
Formate, 5 lb bot.....lb.	1.00	1.25	1.25	1.00	1.25	1.00
Methyl Paracresol, 1 lb bot .....lb.	3.25	3.50	3.50	3.25	3.50	3.25
Phenyl Acetate, 5 lb bot..lb.	3.75	4.00	4.00	3.75	4.00	3.75
Valerate, 5 lb bot.....lb.	.....	3.75	3.75	3.75	3.75	3.75
Salicylate, 5 lb bot.....lb.	1.95	2.00	2.00	1.95	2.10	1.95
Formic Ether see Ethyl Formate						
Geranyl Acetate, 1 lb bot....lb.	3.20	3.25	3.25	3.20	3.25	3.20
Butyrate, 1 lb bot.....lb.	13.00	13.50	13.50	13.00	13.50	13.00
Formate, 1 lb bot.....lb.	12.00	12.50	12.50	12.00	12.50	12.00
Glyco Ester.....lb.	.90	1.00	1.00	.90	1.00	.90
Heliotropin, 100-10 lbs.....lb.	1.65	1.75	1.75	1.65	1.75	1.65
Imported.....lb.	1.95	2.05	2.05	1.95	2.05	1.95
Hydroxycitronellal, 1 lb.....lb.	5.50	7.50	7.50	5.50	7.50	5.50
Indol, CP, 1 oz bot.....oz.	2.90	3.00	3.00	2.90	4.50	2.90
IONONE, 1 lb bot 100%...lb.	5.00	6.00	6.00	5.00	7.00	5.00
Alpha.....lb.	4.80	5.00	5.20	4.80	6.25	4.75
Beta.....lb.	5.70	5.75	5.75	5.70	7.25	5.50
Methyl.....lb.	5.75	6.00	6.00	5.75	7.25	5.75
Iso Borneol.....lb.	2.15	2.25	2.25	2.15	2.25	2.15
Iso Bornyl Acetate.....lb.	2.80	3.00	3.00	2.80	3.00	2.80
Iso-Butyl Benzoate, 5 lb bot..lb.	2.75	3.00	3.00	2.75	3.00	2.75
Iso-Safrol, 1 lb bot imp.....lb.	1.65	1.75	1.75	1.65	1.75	1.65
Domestic, 5 lb bot.....lb.	3.50	3.75	3.75	3.50	3.75	2.50
Lynalyl Acetate, 1 lb bot....lb.	3.25	4.25	4.25	3.25	4.50	3.25
Benzoate, 1 lb bot.....lb.	13.00	14.00	14.00	13.00	14.00	13.00
Formate, 5 lb bot.....lb.	10.50	12.00	12.00	10.50	12.00	10.50
METHYL ACETOPHENONE .....lb.	3.35	3.50	3.50	3.35	3.75	3.35
Anthranilate, 1 lb bot.....lb.	2.40	2.45	2.45	2.40	2.45	2.40
Imported.....lb.	2.70	2.75	2.75	2.70	2.75	2.70
Anthranilic Acid.....lb.	11.75	12.00	12.00	11.75	12.00	11.75
Benzoate, 5 lb bot imp....lb.	1.75	1.85	1.85	1.75	2.00	1.75
Domestic, 5 lb bot.....lb.	1.75	2.00	2.00	1.75	2.00	1.75
Cinnamate, 1 lb bot.....lb.	3.75	4.25	4.25	3.75	4.25	3.75
Heptenone, 1 lb bot.....lb	8.50	9.00	9.00	8.50	9.00	8.50
Paracresol, 1 lb bot.....lb	4.50	8.00	8.00	4.50	8.00	4.50
Phenylacetate, 5 lb bot...lb	3.75	4.00	4.00	3.75	4.00	3.75
Salicylate, USP, 500 lb dr .lb.	.....	.40	.40	.40	.40	.40
50 lb cases.....lb.	.....	.42	.42	.42	.42	.42
Mirbane rect, 1,000 lb drs...lb.	.12	.13	.13	.12	.13	.12

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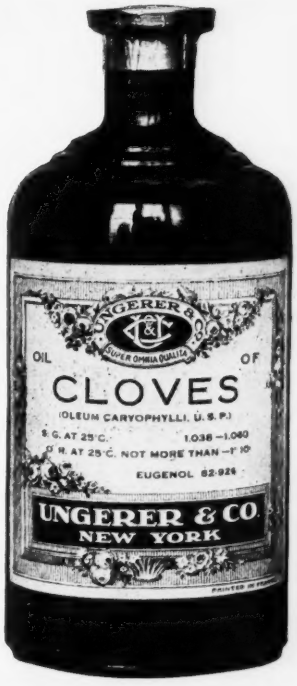

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the period of trial consumers her are going to be hard put to obtain supplies. And there is no indications that the testing out of the plan will not take a long time and embarrass American consumers still further.

If the plan works it is practically a foregone that prices will be higher on all the camphor oil drivatives due to the tariffs that are levied against these manufactured commodities. If, however, the plan fails, large stocks of brown camphor oil and the manufactured commodities will be in Japanese hands looking for a market. In case of failure of the plan, therefore, a break in the market would seem likely. But this is very far off, if it comes at all.

There appears a strong possibility that the plan will not fail due to the strength of the camphor monopoly which is ruled by the Japanese government. If these products must be had regardless of price, then there is no other place to get them than from Japan. The main factor in the success or failure of the plan would seem to be the possibility of eventually substituting camphor oil by other oils or synthetics if such a thing be possible.

Cinnamon Leaf Production Low

Very little cinnamon leaf oil has been prepared during recent months, as estate owners have been using the cut leaf for fertilizing purposes rather than for oil extraction, and it is unlikely that there would be any business in cinnamon oil worth mentioning during the next few months. It is said that quantities will not be larger than five hundredweight lots. Exports of cinnamon leaf and bark oil to all countries during January, February, and March were as follows:

1928: 10,136 pounds at a value of 33,584 rupees or $12,146.
1929: 8,965 pounds at a value of 32,299 rupees or $11,681.

Declared exports to the United States for the same period were: 1928: 2,255 pounds at a value of $2,288; 1929: 2,234 pounds at a value of $2,447. Consul Stillman W. Eells, Colombo.

Citronella Shows Strength

Ceylon citronella oil during the past few months has been steadily on an upward trend, the top price being reached on March 26, when 1.20 rupees were paid ($0.43). Since that time, however, prices have eased off. Supplies are more plentiful and are likely to continue so for the next three months, and buyers are looking for lower prices.

Shipments of citronella oil to all countries during January, February, and March, 1929, as compared with the same period in 1928, were as follows: 1928, 264,116 pounds, at a value of 213,242 rupees or $77,122; 1929, 332,495 pounds at a value of 334,962 rupees or $121,144.

Declared exports to the United States for the same period were: 1928: 124,662 pounds, value $39,848; 1929: 158,090 pounds, value $58,896.

The spot market here is very firm, orders being taken at 46c to 47c per pound.

Lime Oil Very Scarce

Limes are very scarce with very little oil available in the market. Prices have not yet reflected this condition and remain unchanged at $22 and $23 for the expressed, and $9.25 to $9.75 for the distilled. The new crop not does

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Musk Ambrette 1 lb cans...lb	6.50	6.75	6.50	6.75	6.50
Ketone 1 lb cans.....lb	8.00	8.15	8.00	8.15	8.00
Xylene 5 lb cans.....lb.	2.25	2.35	2.25	2.35	2.25
Nerolin 1 lb cans.....lb.	1.35	1.40	1.35	1.50	1.35
Octyl Alcohol 1 lb bot.....lb.	30.00	32.00	30.00	32.00	30.00
Oenanthic Ether lb bot.....lb.	1.90	2.00	1.90	2.00	1.90
Paracresol Methyl Ether....lb.	6.50	6.75	6.50	6.75	6.50
Paracresyl Acetate.....lb.	5.50	5.75	5.50	5.75	5.50
Para Cymene Refd 110 gal dr .....gal.	2.25	2.50	2.25	2.50	2.25
PHENYLACETALDEHYDE					
50% 1 lb bot.....lb.	4.75	5.00	4.75	7.50	4.75
Imported 50%.....lb.	4.75	5.00	4.75	6.50	4.75
100%.....lb.	8.00	8.25	8.00	8.25	8.00
Phenylacetic Ac d 1 lb bot..lb.	3.00	3.25	3.00	3.25	3.00
Phenyl Diacetate 1 oz bot...oz.	3.00	3.25	3.00	3.25	3.00
1 lb bot.....lb.	8.00	10.00	8.00	10.00	8.00
Imported.....lb.	7.00	7.75	7.00	7.75	7.00
Phenylethyl Alcohol 1 lb bot.lb.	4.50	4.75	4.50	4.75	4.50
Phenyl Ethyl Acetate.....lb.	8.25	8.75	8.25	8.75	8.25
Butyrate 1 lb bot.....lb.	15.00	16.00	15.00	16.00	15.00
Formate, 1 lb bot.....lb.	19.00	21.00	19.00	21.00	19.00
Propionate, 1 lb bot.....lb.	16.00	18.00	16.00	18.00	16.00
Valerate, 1 lb bot.....lb.	19.00	20.00	19.00	20.00	19.00
Phenylpropylalcohol, 1 lb bot .....lb.	12.00	12.50	12.00	16.00	12.00
Skatol, 1 oz bot.....lb.	4.50	7.00	4.50	7.00	4.50
Terpinyl Acetate, 25 lb cans..lb.	.75	.80	.75	.80	.75
Imported, 25 lb cans.....	.85	.90	.85	.90	.85
TERPINEOL, CP, 1000 lb drs .....lb.	.33	.35	.33	.35	.33
50 lb cans.....lb.	.37	.39	.37	.39	.37
Absolute, 25 lb cans.....lb.	.48	.50	.48	.50	.48
Imported, 25 lb cans...lb.	.58	.60	.58	.60	.58
Vanillin, USP, 25 lb tins....lb.	.....	7.00	7.00	7.50	7.00
1 lb cans.....lb.	.....	7.15	7.15	7.70	7.15
Second Hands.....lb.	.....	6.75	6.75	6.75	6.75
Valerianic Ether see Ethyl Valerate.....					
Yara Yara, 1 lb cans.....lb.	1.50	1.60	1.60	1.50	1.60	1.50

Essential Oils

Almond Bitter, USP, 5 lb bot lb.	2.75	2.85	2.85	2.70	2.80	2.70
Bitter, ffPA, 5 lb bot.....lb.	3.00	3.10	3.10	3.00	3.25	3.00
Sweet, 56 lb cans.....lb.	.73	.76	.85	.73	.85	.75
Amber crude, 25 lb tins.....lb.	.33	.35	.35	.33	.35	.33
Rectified, 25 lb tins.....lb.	.52	.55	.55	.52	.55	.52
Angelica Root, 1 lb bot.....lb.	21.00	23.00	24.00	21.00	28.50	16.00
Anise Tech, 400 lb drums...lb.	.67	.72	.74	.55	.58	.54
USP, 60 lb cans.....lb.	.68	.69	.74	.58	.61	.57
Apricot Kernel, 50 lb cans...lb.	.40	.42	.46	.40	.50	.44
Bay, 25 lb tins N. F. V., 50.55% Phenol.....lb.	2.40	2.60	3.00	2.30	3.00	1.90
Terpeneless.....lb.	5.80	6.00	6.00	5.80	6.00	5.80
BERGAMOT, 25 lb coppers.lb.	4.25	5.05	5.35	4.15	6.10	4.85
Terpeneless.....lb.	14.00	18.00	18.00	14.00	18.00	14.00
Artificial, 25 lb cans.....lb.	2.50	3.25	3.25	2.50	3.25	2.50
Birch, Sweet, Northern, 25 lb tins.....lb.	3.75	4.00	4.00	3.75	4.00	3.75
Southern, 25 lb tins.....lb.	.....	1.95	1.95	1.95	1.95	1.95
Birch Tar, rect., 5 lb bot.....lb.	.50	.55	.55	.50	.55	.50
Crude, 50 lb tins.....lb.	.12	.13	.13	.12	.13	.12
Bois de Rose, tins.....						
Brazillian.....lb.	1.55	1.60	1.70	1.55	2.00	1.80
Cayenne, tins.....lb.	1.90	2.00	2.35	1.90	2.60	2.05
Cade, 25 lb cans.....lb.	.25	.27	.27	.25	.27	.25
Cajuput, native, 50 lb tins..lb.	.83	.88	.88	.70	.75	.70
Calamus, 5 lb bot.....lb.	3.40	3.50	3.50	3.40	3.50	3.40
Camphor Sassa, 1000 lb drs..lb.	.22	.23	.23	.14½	.15½	.14½
White, 400 lb drs.....lb.	.26	.29	.29	.10½	.12½	.10½
Cans, 50 lbs.....lb.	.28	.30	.30	.14	.15	.14
CANANGA, Native 25 lb tins .....lb.	2.90	3.15	3.25	2.90	3.50	3.00
Rectified, 25 lb tins.....lb.	3.40	3.50	3.50	3.40	4.00	3.40
Caraway, USP.....lb.	1.95	2.00	2.00	1.65	1.85	1.65
Cardamon, NF, 1 lb bot.....lb.	25.00	38.00	38.00	25.00	38.00	25.00
Cascarilla, USP, 1 lb bot.....lb.	75.00	90.00	90.00	50.00	64.00	50.00
Cassia, 80-85%, 400 lb drs..lb.	.....	Nom.	.....	.....	1.45	1.30
Redist, USP, 50 lb cans...lb.	1.50	1.55	2.10	1.50	3.25	1.70
Cedar Leaf, 50 lb tins.....lb.	1.00	1.05	1.05	.95	1.35	.90
Cedar Wood, light, 1000 lb drs .....lb.	.25	.27	.28	.25	.29	.24
Celery, 1 lb bot.....lb.	.....	7.75	7.75	7.75	8.50	7.25
Chaulmoogra, USP 80 lb cases lb	.....	1.50	1.50	1.20	1.20	1.20
Cinnamon Ceylon, 1 lb bot...lb.	9.50	13.00	13.00	9.50	13.00	9.75
Leaf, 5 lb bot.....lb.	1.85	1.95	1.95	1.60	1.75	1.60
CITRONELLA Ceylon, 1000 lb drs.....lb.	.46	.47	.48	.44	.56	.33
50 lb tins.....lb.	.46	.48	.49	.46	.58	.35
Java, 400 lb drs.....lb.	.54	.52	.54	.49	.51	.40
50 lb tins.....lb.	.55	.57	.57	.52	.54	.43
Cloves, USP, 50 lb cans.....lb.	2.55	2.65	2.70	2.55	2.65	1.25
6 lb bot.....lb.	2.75	2.85	2.90	2.75	2.75	1.35
Copaiba.....lb.	.....	.80	.80	.80	.80	.65
Coriander, USP, 10 lb bots..lb.	7.25	7.75	11.25	7.25	14.00	10.50
Croton USP, 25 lb tins.....lb.	1.70	1.75	1.75	.90	.95	.90
Cubebs, USP, 5 lb bot.....lb.	2.90	3.00	3.00	2.90	3.45	2.90
Cumin, 1 lb bot.....lb.	.....	3.75	3.75	3.75	3.75	3.75
Dill, 25 lb cans.....lb.	3.75	3.85	3.85	3.75	4.25	3.75
Erigeron, 20 lb tins.....lb.	1.80	1.90	1.90	1.80	2.50	1.80
EUCALPYTUS Austl, USP, 56 lb cans, cases.....lb.	.50	.51	.60	.50	.60	.59
500 lb drs.....lb.	.51	.53	.59	.51	.59	.58

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hold out any promise of much relief but it is as yet to early to hazard a guess as to just when prices will be higher. More will have to be known of the exact condition of the crop before definite trend can be ascertained.

Lime oil exports from St. Lucia, West Indies, has increased about ten per cent. The exports to the United States during the past two years are shown in the accompanying table:

	1927		*1928*	
	Pounds	*Value*	*Pounds*	*Value*
Lime oil, hand pressed	3,315	$28,095	4,114	$47,773
Lime oil, distilled	8,776	52,998	9,736	57,046

The value of lime oil exports increased 25 per cent., according to report of Consular Agent William Peter, Saint Lucia.

Lemon Oil Becomes Easier

Lemon oil continues in a very easy position with prices this month showing a slight reduction from those of last month. Both the Italian and American oils have been shaded 10c per pound. There are no certain indications as to how the market will react within the next month but there is no reason why any substantial gains should be recorded.

American pressers of oil are in possession of very large stocks this year that are being forced into consumption despite the condition of the market. The fact that during the very warm weather of this Spring and early Summer, the prices have not advanced, is clearly indicative of the fact that the market is in an over-supplied condition. Any recession in prices at a time such as this means that there is too much oil to pass into consumption at existing levels and that consumers are being forced to take more than they require.

There is expected to be plenty of Italian and American oils available to meet the Summer demand. The new Italian crop starts to come through in late Fall. It is now a question of whether the expectations of the supply to more than meet the demand are to be realized. If they are realized, then the market is in a weak position as prices generally start to show a downward tendency when the new crop starts to come through until it is completed in January. After this it is a question of holding the oil until the Spring and Summer demand agains shows up.

Buyers are now in a favorable position, but the market will bear close watching during the next month or two to see just how supply and demand are balanced.

Geranium Market Confusing

Geranium oils have resumed a normal position in the primary markets in that offerings of African oil for import are now priced above the Bourbon material. The markets for both grades are strong, although the market for the African grade has advanced much further than that for the Bourbon—in the primary market at least. Offerings of African oil for import are now offered at $6.00 per pound, while offerings of the Bourbon are priced at $5.00 per pound.

The spot market, however, does not represent the picture in the primary markets. On spot, prices are confused with some sellers offering the Bourbon at prices above those for the African. The confusion in the spot market is due to the fact that there are very heavy sup-

	Current Market		1929 High	1929 Low	1928 High	1928 Low
Fennel, USP, 25 lb tins.....lb.	.80	.90	.85	.80	.85	.80
Geranium African, 25 lb tins..lb.	5.25	5.35	5.35	3.85	4.25	3.00
Bourbon, 28 lb tins.....lb.	5.50	5.65	5.85	4.25	4.90	3.00
Turkish, 28 lb tins.....lb.	3.25	3.35	3.35	3.00	3.35	2.45
Ginger, 1 lb bot.....lb.	6.00	6.25	6.25	6.00	6.75	4.80
Gingergrass, 28 lb tins.....lb.	2.50	2.70	2.70	2.50	2.70	2.50
Hemlock, 25 lb tins.....lb.	1.05	1.10	1.10	1.05	1.10	1.00
Juniper Berries, USP, 25 lb tins .....lb.	2.05	2.10	2.15	2.05	3.75	2.10
Wood, 50 lb tins.....lb.	.50	.60	.60	.50	.60	.50
LAVENDER, USP, 28 lb tins .....lb	3.25	3.40	3.40	3.25	3.85	3.00
Spike Spanish, 50 lb cans..lb.	.90	.95	.95	.90	1.05	.90
Lemon Ital, 25 lb cans.....lb.	4.10	5.15	5.75	4.10	4.85	2.30
California 35 lb cbys....lb.	3.55	3.70	4.65	3.55	4.35	1.85
Lemongrass, native, 50 lb cans .....lb.	.81	.83	.83	.81	.95	.81
Limes, expressed, 25 lb tins..lb.	22.00	23.00	23.00	20.00	25.00	9.25
Distilled, 25 lb tins.....lb.	9.25	9.75	9.75	7.75	8.50	6.00
Linaloe Mex., 70 lb cases....lb.	2.20	2.25	2.25	2.20	2.45	1.90
Mace, distilled, 50 lb tins....lb	1.75	1.80	1.80	1.75	1.85	1.60
Mandarin, 25 lb cases.....lb.	11.00	11.50	11.50	11.00	11.50	7.50
Mirbane, ref Aromatic Chemicals.....						
MUSTARD, USP, 1 lb bots.lb.	9.50	10.00	10.00	9.50	10.00	9.50
Artif, USP, 5 lb bot.....lb.	1.60	1.70	1.70	1.60	2.00	1.60
Neroli Bigarade, ½ & ¼ & 1 lb bot .....lb.	150.00	325.00	325.00	75.00	140.00	75.00
Petale, 1 lb bot.....lb.	160.00	170.00	170.00	160.00	170.00	160.00
Artificial, 1 lb bot.....lb.	5.00	15.00	15.00	5.00	15.00	5.00
Nutmeg, USP, 50 lb tins....lb	1.75	1.80	1.80	1.75	1.80	1.60
ORANGE BITTER, 25 lb tins .....lb	5.25	5.50	6.75	5.00	8.75	2.70
Sweet W Ind, 25 lb tins..lb	5.10	5.35	6.50	4.95	8.75	2.60
Italian, 25 lb cop.....lb.	5.20	6.05	7.35	5.10	9.00	2.80
American, Cold pressed 25 lb tins.....lb.	4.95	5.20	7.40	4.90	8.75	3.50
Distilled, 25 lb tins....lb.	2.95	3.05	5.25	2.95	7.75	2.20
Spanish, 25 lb tins.....lb.	6.25	6.40	7.15	5.25	8.75	3.00
Oil Orris, concrete.....oz.	6.00	6.25	6.25	2.50	4.90	2.50
Origanum, 50 lb cans tech...lb.	.28	.30	.30	.28	.30	.28
Parsley, 1 lb bot.....lb.	9.00	9.25	9.25	8.00	8.25	6.50
Patchouli, 5 lb bot.....lb.	8.50	8.75	7.00	6.75	13.00	7.25
Pennyroyal, dom, 25 lb tins..lb.	1.55	2.10	2.10	1.55	1.90	1.55
Imported, 25 lb tins.....lb.	.....	1.20	1.20	1.20	1.55	1.20
Pepper Black lb.....	10.25	.....	.....	.....	.....	.....
Peppermint, nat. 60 lb cases lb.	3.10	3.35	3.35	2.85	3.55	3.10
Redis, USP, 60 lb cs.....lb.	3.40	3.55	3.55	3.10	3.65	3.40
Petit Grain S A., 25 lb tins..lb.	1.95	2.05	2.05	1.90	2.10	1.50
French, 1 lb bot.....lb.	6.25	6.50	6.50	6.25	6.50	6.25
Italian, 25 lb tins.....lb.	2.20	2.30	2.30	2.20	2.30	2.20
Pimento, 25 lb tins.....lb.	2.50	2.75	2.75	2.25	3.25	2.55
Pineedle Siberian, cans.....lb.	.60	.65	.65	.60	.85	.65
Pinus, Sylvestris, 25 lb tins..lb.	1.90	2.00	2.00	1.90	2.00	1.90
Pumilio, USP, 25 lb tins...lb.	2.85	2.95	2.95	2.85	2.95	2.85
Rose Fr, 8, 16, & 32 oz pkgs..lb.	14.00	17.00	17.00	12.00	15.00	12.00
Bulg, 8, 16 & 32 oz pkgs...lb.	14.00	14.50	14.50	11.50	13.00	10.25
Rosemary, USP, 27½ lb tins..lb.	.....	.56	.56	.47½	.56	.47½
1000 lb drums.....lb.	.....	.50	.50	.42½	.45	.42½
Tech, 25½ lb tins.....lb.	.....	.40	.40	.40	.34	.34
Rue, 1 lb bot.....lb.	3.15	3.25	3.25	3.15	3.25	3.15
SANDALWOOD, E Ind, USP, 100 lb case.....lb.	8.00	8.50	9.00	7.45	7.50	7.05
W Indian (Amayris), 25 lb tins.....lb.	2.85	2.95	2.95	2.25	2.65	2.30
Sassafras, USP, 50 lb cans...lb.	.85	.87	.87	.78	.85	.75
Artificial, 1000 lb drs, 60 lb cans.....lb.	.34	.38	.38	.26	.28	.26
Safrol, cans.....lb	.44	.45	.45	.28	.29	.28
Savin, 50 lb tins.....lb	1.65	1.80	1.90	1.65	1.90	1.70
SPEARMINT, USP, 50 lb tins .....lb	4.05	4.25	4.40	4.05	4.55	4.10
Spruce, 50 lb tins.....lb	1.05	1.10	1.10	1.05	1.10	1.00
Tansy, American, 25 lb tins..lb.	3.75	4.00	4.00	3.75	4.50	3.75
Tar, 50 gal bbls.....lb.	.25	.30	.30	.25	.30	.25
USP, 50 gal bbls.....lb.	.75	1.50	1.50	.75	1.50	.75
Thyme, red, NF, 25 lb tins..lb.	.78	.80	.90	.78	.90	.80
White, NF, 25 lb tins.....lb.	.83	.85	.90	.83	.90	.85
Tech, 110 lb drums.....lb.	.60	.70	.70	.60	.70	.60
Turpentine, USP, rect cbys..lb.	.27	.30	.30	.27	.30	.27
Vetivert Bourbon, 10 bot....lb.	6.25	6.50	6.50	6.25	6.75	5.85
Indian, 1 lb bot.....lb.	25.00	38.00	38.00	25.00	38.00	25.00
Java, 1 lb bot.....lb.	15.00	16.00	16.00	15.00	16.00	15.00
Wine, heavy, 1 lb bot.....lb.	1.65	1.75	1.75	1.65	1.75	1.65
WINTERGREEN Gaultheria, true, 25 lb tin.....lb.	8.00	10.00	10.00	8.00	10.00	8.00
Southern, 25 lb tins....lb.	3.75	4.00	4.00	3.75	4.00	3.75
Synthetic see Methyl salicylate.....						
Wormwood, dom, 25 lb tins..lb.	30.00	34.00	35.00	30.00	35.00	14.00
Wormseed, Balt, 25 lb tins...lb.	1.80	1.90	1.90	1.80	3.45	1.90
Ylang Ylang Bourbon, 10 lb tins No. 1.....lb.	9.50	9.75	9.75	9.50	10.50	8.50
10 lb tins No. 2.....lb.	8.25	8.50	8.50	8.25	8.50	6.75
Manila, 1 lb bot.....lb.	30.00	40.00	40.00	30.00	32.00	30.00

Oleoresins

Aspidum, USP, bot and tins..lb.	.....	1.25	1.45	1.25	2.10	1.50
Capsicum, USP, bot and tins.lb.	3.50	4.25	4.25	3.50	4.25	3.50
Cubeb, USP, bot and tins....lb.	3.00	3.25	3.25	3.00	3.25	3.00
Ginger bot and tins.....lb.	2.85	3.35	3.35	2.85	3.35	2.25
Malefern see Aspidum.....						

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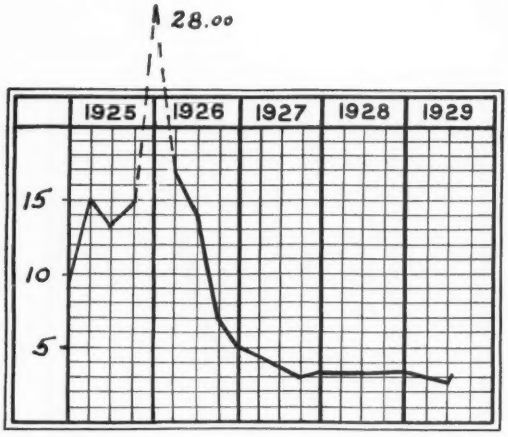
plies of African oil on spot due to the fact that many factors here bought very heavily of the African oil when the prices were low. While these factors bought in anticipation of a rise—and while the heavy buying helped materially in the sharp advance of primary market quotations for the African oil—the over-loaded condition of the spot market is causing African oil to be sold at prices far below the primary market quotations.

The positions of both grades at the moment are strong with the higher prices quite likely to be maintained if consuming demand absorbs the large holdings of the African oil. The main reason why prices vary so widely at the present time is that all the holders did not buy at the same prices, and their opinions of the market future and ability to hold the goods are different.

Peppermint Oil Strength Surprising

Peppermint oil staged a marked recovery in prices during the month and advanced from $2.85 per pound to a minimum of $3.10 per pound for the natural oil on spot. The reason given for the advance is that the large lots of



Peppermit Oil Prices: Dollars Per Pound

available oil have been bought by consumers and operators.

But the buying of itself does not furnish the real reason for the strong position of the market, but rather the reason why the buying on the part of the well informed took place These buyers are said to be certain of a very strong market during the coming months due to the fact that the prospects of the new crop being quite uncertain. There is said to have been considerable damage done to the crop as a result of the recent hot dry spell.

The new crop will start to come through in late August or early September, and until that time nothing definite will be known. However, in the face of the two very large crops of the past years, and in the face also of the steadily increasing acreage in Oregon and California, heavy buying by those close to the market would appear to indicate that the size of the coming crop is estimated considerably lower than that of last year.

Peppermint oil has not gone above a price of $3.50 per pound for natural oil during the past two and one-half years, but from present indications it is in a fair way to do

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Orris, bot & tins....lb.	15.00	18.00	18.00	15.00	18.00	15.00
Pepper, black, USP, bot & tin....lb.	.....	9.50	9.50	9.50	.....	.....
Vanilla, bot & tins....lb.	8.00	8.75	8.75	8.00	8.75	8.00

Perfumer's Sundries

Almond Meal, 25 lb cans....lb.	.20	.21	.21	.20	.21	.20
Amber liquid, 400 lb drs....lb.	2.20	2.30	2.30	2.20	2.30	2.20
Ambergris, Black, boxes....oz.	14.00	15.00	15.00	14.00	15.00	14.00
Gray boxes....oz.	32.00	36.00	36.00	32.00	36.00	32.00
BALSAM COPAIBA Para, 80 lb cases....lb.	.....	.33½	.34	.30	.49	.32
South American, USP, 80 lb cases....lb.	.....	.37	.37	.33	.52	.35
Peru, 120 lb cases....lb.	2.00	2.00	2.05	1.75	1.80	1.65
Tolu, 90 lb cases....lb.	1.25	1.30	1.30	1.15	1.20	.95
Benzoin Gum, Siam, boxes...lb.	1.20	1.30	1.30	1.20	1.30	1.20
Castoreum, 1 lb bot....lb.	9.50	10.00	10.00	9.50	10.00	9.50
Chalk, Precip, 1 gt 175 bbls.lb.	.04½	.05	.05	.04½	.05	.04½
Cherry Laurel Water, 24 ltr cby....lb.	4.10	4.60	4.60	4.10	5.60	4.10
Civet, Abyssin, horns....oz.	2.10	3.00	3.00	2.10	3.00	2.10
Labdanum, 5 lb bot....lb.	5.50	6.00	6.00	5.50	6.00	5.50
Lanolin, hydrous, 350 lb bbls....lb.	.15	.16	.16	.15	.16	.15
Anhydrous, 350 lb bbls....lb.	.16	.17	.17	.16	.17	.16
Musk Pods Cabardine, tins..lb.	.....	.....	.....	.....	.....	.....
Musk Tonquin, tins, Pods...oz.	24.00	26.00	26.00	24.00	26.00	24.00
Grains Cabardine, tins....oz.	.....	.....	.....	.....	.....	.....
Tonquin, tins, Grained..oz.	28.00	34.00	34.00	28.00	34.00	28.00
Synthetic See Aromatic Chemical....						
PETROLATUM, snow white, 350 lb bbls....lb.	.12½	.13¼	.13¼	.12½	.13¼	.12½
Light Amber, 350 lb bbls. lb.	.12½	.13	.13	.12½	.13	.12½
Rice Starch, 140 lb bags....lb.	.09	.10	.10	.09	.10	.09
Rose Water, 24 ltr cbys.. cby.	5.00	5.50	5.50	5.00	5.50	5.00
Sandalwood, pwd bags....lb.	.22½	.40	.40	.22½	.40	.22½
Saponin, 5 lb tins....lb.	1.15	1.30	1.30	1.15	1.30	1.15
Talc, Italian, 220 lb bags...ton.	60.00	80.00	80.00	60.00	80.00	60.00
French, 220 lb bags....ton.	40.00	45.00	45.00	40.00	45.00	40.00
Aconite Root, USP, bags....lb.	.20	.21	.20	.21	.27	.19
Agar Agar, domestic, No. 1, 200 lb....lb.	1.40	1.45	1.45	1.40	1.40	.96
Almonds Meal....lb.	.15	.30	.30	.15	.30	.15
Aletris Root, bags....lb.	.36	.37	.38	.36	.42	.36
Alkanet Root, bags....lb	.12	.13	.13	.11	.12	.10

Drugs and Spices

ALOES, Cape, 400 lb cases. lb.	.14	.15	.18	.14	.18	.09½
Curacao, 100 lb cases....lb.	.24	.25	.25	.19	.20	.12
Socotrine, Whole, 300 lb cs lb.	.45	.50	.50	.45	.45	.35
Althea Root, bags....lb.	.20	.22	.22	.20	.22	.20
Cut cases....lb.	.32	.39	.40	.32	.40	.33
Angelica Root, bags....lb.	.25	.26	.28	.25	.25	.18
Angostura Bark, bags....lb.	.25	.26	.26	.19	.18	.18
Anise Star case....lb.	.12	.12½	.19	.12	.26½	.14
Spanish, bags....lb.	.16	.18	.19	.16	.20	.13
ARABIC GUM, White, No. 1, 100 lb bags....lb.	.28	.29	.29	.22	.27½	.22
Seconds, 200 lb bags....lb.	.25	.26	.26	.16	.21	.16
Sorts, Amber, 220 lb bags..lb.	.20	.23	.23	.11	.11½	.10½
Powd, USP, 300 lb bbls....lb.	.23	.24	.25	.17½	.21	.17½
Areca Nuts, 100 lb bbls....lb.	.10	.11	.11	.10	.12½	.10
Powd, 100 lb bbls....lb.	.14	.15	.15	.14	.21	.15
Arnica Flowers, bales....lb.	.85	.90	1.00	.80	1.50	.95
Root, bags....lb.	.35	.36	.36	.35	.45	.35
Arrowroot, St. Vincent, powd bbls....lb.	.10	.10½	.10½	.10	.10½	.10
Asafoetida, 250 lb cases....lb.	.23	.26	.28	.23	.31	.25
Powd, 50 lb boxes....lb.	.50	.54	.54	.50	.68	.50
Balm of Gilead Buds, bags....lb.	.35	.40	.40	.35	.40	.31
Balmony Herbs, bales....lb.	.23	.25	.25	.18	.23	.18
Barberry Bark, of root, bags lb.	.19	.20	.20	.19	.32	.19
Bayberry Bark, bales....lb.	.10	.11	.13	.10	.18	.12
Wax bbls....lb.	.29	.32	.32	.29	.32	.29
BELLADONNA LEAVES, bales....lb.	.17	.19	.20	.17	.23	.17
Root, bags....lb.	.19	.20	.21	.19	.21	.19
Bees Wax, White, cases....lb.	.55	.60	.60	.55	.60	.55
Yellow refined cases....lb.	.41	.42	.42	.41	.42	.41
Berberis Aquafolium Root, bags....lb.	.11	.12	.12	.10	.13	.10
Beth Root, bags....lb.	.17	.18	.18	.17	.20	.17
Black Indian Hemp Root, 100 lb bags....lb.	.18	.19	.19	.18	.20	.18
Blood Root, bags....lb.	.18	.18½	.18½	.17½	.35	.21
Blueflag Root, bags....lb.	.19	.20	.20	.19	.27	.17
Boldo Leaves, bales....lb.	.15	.17	.17	.15	.17	.15
Boneset Herb, bales....lb.	.11	.12	.12	.10	.10	.07½
Borage Flowers, bales....lb.	.15	.16	.15	.14½	.17	.14½
Broomtop Herb Cut, bales..lb.	.10	.11	.11	.10	.11	.10
Bryonia Root, bags....lb.	.11	.12	.12	.11	.12	.10½
BUCHU LEAVES Short, 250 lb. bales....lb.	.37	.38	.40	.37	.55	.42
Long bales....lb.	.75	.80	.80	.75	.80	.75
Buckbean Leaves, bales....lb.	.09	.10	.10	.09	.15	.13
Buckthorn Bark, bags....lb.	.05	.05½	.05½	.05	.05½	.05
Berries, bags....lb.	.45	.50	.50	.45	.50	.45
Burdock Root, bags....lb.	.13	.14	.17	.13	.17	.11
Seed bags....lb.	.65	.....	.65	.65	...	.65
Burgundy Pitch, 110 stand gross for net....lb.	.08	.09	.09	.08	.09	.08
Imported....lb.	.12	.13	.13	.12	.13	.12
Calabar Beans, bags....lb	.25	.26	.26	.22	.27	.22

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Drugs and Spices

{ Monthly Review }

so before the Fall is well under way, for at the time when the market should be at the bottom, it has accumulated surprising strength. The situation will bear close watching during the next month.

Vanilla Pointing Higher

The strong position of the market for vanilla beans is not generally realized. But the fact of the matter is that the crop of Mexican cuts has fallen from a normal size of 90,000 pounds to 40,000 pounds. Furthermore, there is a dearth of Guadeloupe vanilla which is generally used to supplement the crop of Mexican cuts. The Guadeloupe beans are whole beans, but usually sell at one-eighth under the price of Mexican cuts. The crop of Guadeloupe beans was originally estimated at 40,000 pounds, but a tornado which occurred in September, 1928, cut this figure down to less than 5,000 pounds.

Mexican cuts are strongly held and should be shortly selling at $3.00 per pound. By the Fall of the year, this variety of vanilla will have been completely consumed and buyers will be forced to do without or else buy whole beans at a price 25 to 40c per pound higher than cuts.

The fact that the available supplies of vanilla beans have been largely bought by leading factors who have been aware of the real situation for some time past, makes a higher market almost a certainty. The market will be found to respond immediately to any marked buying activity, and it is only a question of time until consumers will begin to feel the real effects of the strong statistical position.

Pyrethrum Position Puzzling

While the statistical position of pyrethrum flowers appears bullish, there is a likelihood of the market remaining at present prices or showing only a slight advance.

Imports into the United States have increased sharply during the past five years as shown by the following figures:

1925	3,300 tons
1926	3,600 "
1927	4,000 "
1928	4,970 "
1929 (5 months)	869 "

The new crop of Japanese is estimated quite close to what is considered a normal figure, and will therefore run from 6,000 tons to 6,500 tons. The carryover in Japan is estimated at approximately 1,325 tons.

If the imports of last year are considered equal to consumption in this country, and the estimate of the Department of Commerce as to Japan's home consumption of 2,800 tons is accepted, we have a total for the entire world consumption as follows:

U. S. A.	4,970 tons
Japan	2,800 "
Other Countries	1,500 "
Total consumption	9,270 tons

The Dalmatian crop is estimated to be the same as last year, namely about 600 to 700 tons. But this crop is finding greater use in Europe and smaller amounts of it are now finding their way to this country. Furthermore, the size of the Dalmatian crop appears steadily to be getting

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Calamus Root, blchd cases..lb.	.45	.47	.52	.45	.50	.35
Unbleached, bags.....lb.	.06½	.07	.07	.06½	.07	.06½
Calendula Petals, imp bales..lb.	1.40	1.45	1.50	1.40	1.75	.85
Calisaya Bark, bales.....lb.	.21	.22	.22	.21	.23	.20
Powdered, bbls.....lb.	.26	.27	.27	.26	.32	.18
Canary Seed, South America, bags.....lb.	.07	.07½	.07½	.05	.05½	.04½
Dutch, bags.....lb.	.05¾	.06¼	.06¼	.05¼	.06¼	.05¼
Candelilla Wax, bags.....lb.	.27	.28	.28	.27	.28	.27
Cannella Alba Bark, bales..lb.	.30	.31	.31	.28	.32	.28
Cannabis, U.S.P.....lb	.25	.30	.33	.22	.....	.....
Cantharides, Chinese, cases..lb.	.42	.47	.55	.42	.72	.50
Powdered, boxes.....lb.	.65	.70	.80	.65	.88	.75
Russian, cases.....lb.	.50	.51	.55	.50	.70	.54
Powdered, boxes.....lb.	.65	.70	.75	.65	.80	.68
Caraway Seed, African, bags .....lb.	.05	.06	.06	.05	.12	.05
Dutch, 11 lb bags.....lb.	.11½	.12	.12	.09½	.12	.09½
Cardamon bleached, cases..lb.	1.50	1.60	1.75	1.50	2.00	1.50
Decorticated, cases.....lb.	1.45	1.55	1.60	1.45	1.60	1.25
Cascara Amarga, 150 lb bbls..lb.	Nom.	.....	.....	.....	.90	.90
So called bales.....lb.	.60	.85	.85	.60	.85	.60
CASCARA SAGRADA, 1926 bark.....lb.	.17	.18	.18	.15	.16	.15
1927 bark.....lb.	.15	.16	.16	.14	.15	.14
1928 bark .....lb.	.14	.15	.15	.13	.14	.13
Cascarilla Bark, quills, bales..lb.	.90	1.00	1.00	.90	1.00	.90
Siftings, bbls.....lb.	.65	.....	.65	.65	.65	.65
Cassia Batavia No. 1 bbls....lb.	.13½	.13½	.15	.13½	.16	.13½
Shortstick, bales.....lb.	.11½	.11½	.12½	.11	.13	.11
Batavia No. 3, bales.....lb.	.09½	.10	.11	.09½	.11	.09½
China Select Rolls, cases..lb.	.08½	.08¾	.09	.08½	.13½	.09
Broken, bales.....lb.	.09½	.10	.10	.09½	.10	.08½
Saigon, thin.....lb.	.30	.31	.39	.28	.39	.22
Buds, cases.....lb.	.16½	.17	.20	.16½	.19	.18½
Fistula, baskets.....lb.	.11	.13	.13	.11	.24	.11
Catnip, Herb, bales.....lb.	.19	.20	.23	.18	.23	.19
Celery Seed, bales.....lb.	.17¾	.18¼	.19	.16¾	.21	.19
Ceresin Wax, White, bags...lb.	.15	.20	.20	.15	.20	.15
Yellow 200 lb. bags.....lb.	.11	.14	.14	.11	.14	.11
Imp. 100 lb. bags.....lb.	.25	.38	.38	.25	.38	.25
CHAMOMILE FLOWERS Roman, bales.....lb.	.40	.45	.50	.40	.50	.18
Hungarian, cases.....lb.	.21	.22	.26	.23	.24	.15
Charcoal Willow, powd, bbls.lb.	.06	.06½	.06½	.06	.06½	.06
Wood, powd, bbls.....lb.	.04	.05	.05	.04	.05	.04
Chestnut Bark.....lb.	.07	.08	.08	.07	.....	.....
Leaves bales.....lb.	.05	.05½	.05½	.05	.06½	.05
Chicle Gum, lb bbls.....lb.	.58	.75	.75	.58	.75	.58
Chiretta, bales.....lb.	.28	.30	.30	.28	.30	.25
Cinnamon, Ceylon, No. 1, bales .....lb.	.47	.48	.62	.47	.62	.60
No. 2 bales bend.....lb.	.45	.46	.51	.45	.61	.55
No. 3 bales.....lb.	.55½	.56	.56	.55½	.56	.55½
Clover Tops, Red, bags ....lb.	.10	.11	.14	.10	.12	.10
Cloves Zanzibar, 135 lb bbl...lb.	.36½	.37	.38	.35	.38	.18
Cochineal, Black.....lb.	.69	.....	.69	.69	.69	.69
Silver.....lb.	.85	.....	.85	.85	.85	.85
Cohosh Root, Black, bags....lb.	.07½	.08½	.09	.07½	.09	.07
Blue, bags.....lb.	.11	.12	.12	.11	.12	.09
Colchicum Root, bags.....lb.	.08	.09	.09	.07	.07	.06
Seed, bags.....lb.	.65	.70	.85	.65	.70	.25
COLUMBO ROOT, bags...lb.	.15	.16	.20	.15	.20	.05
Colocynth Pulp, bales.....lb.	.30	.33	.45	.33	.110	.42
Coltsfoot Leaves, bags.....lb.	.08	.09	.09	.08	.12	.08
Comfrey Root, bags.....lb.	.13	.....	.14	.13	.14	.14
Condurango Bark, bags.....lb.	.15	.16	.17	.15	.16	.13
Coriander Seed, Morocco, bags .....lb.	.03	.03½	.06	.03	.13	.05
Bleached, bags.....lb.	.07½	.08	.11½	.07½	.19	.11
Corn Silk, bales.....lb.	.05½	.06½	.06½	.05½	.06½	.05
Cotton Root Bark, bales....lb.	.....	.12	.13	.12	.15	.12
Cowhage, 1 oz tins.....lb.	1.00	.....	1.00	1.00	1.00	.95
Cramp Bark so called bales..lb.	.06½	.07	.08	.06	.08	.05½
True, bags.....lb.	.35	.38	.48	.35	.55	.34
Cranesbill Root, bags.....lb.	.10	.....	.10	.10	.12	.10
CUBEB BERRIES, XX bags .....lb.	.48	.53	.53	.48	.53	.48
Powdered, boxes.....lb.	.50	.55	.55	.50	.55	.50
Culvers Root, bags.....lb.	.18	.19	.20	.18	.22	.18
Cumin Seed, Malta, bags....lb.	.13½	.13½	.13½	.12	.15	.12
Morocco, bags.....lb.	.13½	.13½	.13½	.12	.15	.12
Cuttlefish, Bone Trieste, Straps .....lb.	.25	.25	.25	.14	.14	.13
French, boxes.....lb.	.22	.22	.22	.12½	.15	.12½
Powdered, bbls.....lb.	.09	.10	.10	.09	.10	.09
Broken, bales.....lb.	.07	.....	.07	.05	.05	.05
Damiana Leaves, bales.....lb.	.17	.18	.18	.16	.30	.16
Dandelion Root, Imp. bags..lb.	.20	.24	.29	.19	.20	.14
Deer Tongue Leaves, bales...lb.	.11	.13	.13	.11	.18	.10
Digitalis Leaves, bales.....lb.	.42	.52	.70	.42	.70	.30
Dogwood Bark, Jamaica bags .....lb.	.09	.10	.11	.09	.10½	.09
American bales.....lb.	.06½	.....	.06½	.06½	.06½	.06½
Doggrass Root, USP, cut bags .....lb.	.10	.11	.12	.10	.13	.10½
Dragons Blood Mass, cases..lb.	.65	.70	.70	.65	.70	.65
Reeds, boxes.....lb.	.90	.....	.95	.90	.95	.95
Echinacea Root, bags.....lb.	.24	.26	.28	.24	.33	.26
Elcampane Root, bags.....lb.	.08	.09	.09	.08	.09	.08
Elder Flowers, bags.....lb.	.40	.45	.45	.22	.25	.19
Elemi Gum, 85 lb cases.....lb.	.26	.28	.28	.26	.28	.20
Elm Bark, bundles.....lb.	.30	.31	.31	.25	.27	.22
Grinding bags.....lb.	.13½	.14	.14	.13½	.14	.13½
Powdered, bbls.....lb.	.19	.22	.22	.19	.22	.19
Ephedra Vulgaris, bales.....lb.	.12	.13	.16	.12	.25	.15
ERGOT, 150-200 lb bags....lb.	.65	.75	.95	.65	2.50	.80
Eucalyptus Leaves, bales....lb.	.08	.09	.11	.07½	.10	.06½
Euphorbia Pilulifera, Herb, bags.....lb	.09	.10	.11	.09	.10	.07½

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smaller. It is stated by a factor in the domestic market that he sold Japanese flowers for shipment to Dalmatia. So the reports of the shortage in that country appear to be quite true.

Totaling the Japanese and Dalmatian crops and the carryover, we have visible supplies of 7,925 tons. Against this we have a world consumption of 9,270 tons. This gives an apparent shortage of 1,345 tons.

Since imports during the first five months of this year were only 869 tons, or less than one-fifth of last year's total imports, the opinion is given that consumers have assumed a waiting position and must buy heavily before long. The only fly in this argument is that the heavy imports of last year, totaling 4,970 tons, against 4,000 tons for the year before, may still be largely in consumers' hands so that they did not need large quantities during the forepart of this year. If this is so, then the entire argument falls flat and the position is easy. For in this case the consumption of the U. S. is nearer 4,000 tons than it is to 4,970 tons, and with consumers using last year's imports, the deficiency almost completely disappears.

However, the market is, to say the least, steady, and the present season is proving an excellent one for consumption of flowers. Buyers should watch developments carefully as an upward movement can very easily start if several large consumers are forced to replace their supplies to any degree.

Gum Aloes Working Higher

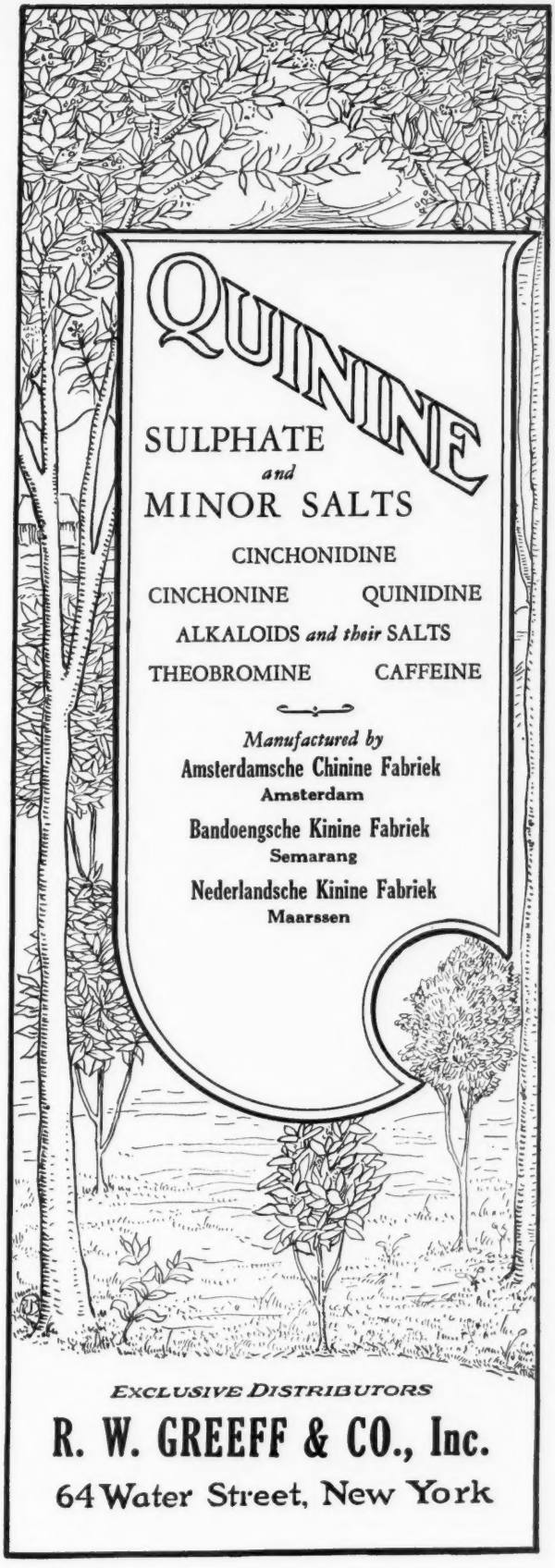
Gum aloes has not changed its position in the last few months and goods are still exceedingly scarce and high priced. The position is exactly as previously explained. In the primary market the labor has been almost completely displaced by the entry of a large petroleum refining plant into the territory. This refinery is paying higher wages and giving steady employment. The women and children, who might substitute for the men in the gathering of aloes, are not inclined to work since the men folks now have plenty of money.

There is stated to be about 1,000 cases now in the primary market which is held at a price of 22c per pound down there. The spot market is bare of supplies, and goods entering the country immediately pass into the hands of consumers.

There is very little likelihood of a change for some time to come, and in fact at the moment there is nothing to indicate that a change will ever come. The only thing that will stimulate production at all will be the offering of still higher prices to the natives so that some of them at least will be induced to resume production of aloes than work in the oil refinery. In the meanwhile it looks as though aloes is going to be a hard item to buy, but despite the rash statements of some manufacturers that they will cease to sell preparations containing aloin, we think they will still be buying many years from now.

Larkspur seed is exceptionally strong the spot market advancing 10c per lb. during the past month, orders being taken at 50c to 55c per lb. The entire strength of this market rests upon reports of crop failure and a general stringent situation may be expected in this commodity for some time.

	Current Market	1929 High	1929 Low	1928 High	1928 Low
Euphorbium Gum, cases....lb.	.14	.20	.20	.14	.20	.14
Fennel Seed, French, bags...lb.	.16	.17	.18½	.16	.25	.16½
German bags.....lb.	.20	.22	.27	.20	.32	.20
Foenugreek Seed, 200 lb bags .....lb.	.06	.06½	.06½	.05	.06	.04½
Fish Berries, 100-125 lb bag..lb.	.06	.07½	.07½	.06	.07½	.06
Flax Seed, Whole ..182 lb bbls..	14.00	14.75	14.75	14.00	14.75	14.00
Ground, 180 lb bbls.....lb.	.08	.08½	.08½	.08	.08½	.08
Flea Seeds Black bags.....lb.	.20	.21	.24	.20	.27	.16
Fringe Tree Bark or Root bags .....lb.	.21	.22	.24	.21	.27	.22½
Fumigating Pastiles, boxes..lb.	.30	.35	.35	.30	.35	.30
Galangal Root, bags.....lb.	.14	.15	.15	.14	.15	.11
Galbanum Gum, cans.....lb.	1.15	1.25	1.25	1.15	1.25	1.00
Gamboge Gum, 100 lb cases..lb.	1.15	1.20	1.25	1.15	1.35	1.10
Powdered, cases.....lb.	1.25	1.35	1.40	1.25	1.50	1.20
Gelsemium Root, bags.....lb.	.09	.10	.12	.09	.13	.09
GENTIAN ROOT, bags....lb.	.09½	.10½	.11	.09½	.11	.09
Ground bbls, boxes.....lb.	.13	.14	.14	.13	.14	.11
Powdered, bbls, boxes....lb.	.13	.14	.14	.13	.14	.12½
Ginger, African, bags.....lb.	.15	.15½	.15½	.13	.14½	.10½
Jamaica Grinding bags....lb.	.18	.18½	.20	.18	.23	.17
Cochin ABC & Lemon, bags .....lb.	.17	.18	.18	.17	.20	.16
Ginseng Root, cultivated cs..lb.	8.00	10.00	10.00	8.00	10.00	8.00
Wild Southern, cases.....lb.	.....	16.00	16.00	16.00	16.00	8.50
Golden Seal Root, bags.....lb.	3.45	3.55	3.80	3.20	4.50	3.90
Powdered, boxes.....lb.	3.95	4.05	4.35	3.95	5.25	4.60
Herb, barrels.....lb.	1.25	1.30	1.30	1.25	1.30	1.25
Grains of Paradise, bags....lb.	.50	.60	.85	.40	.60	.40
Grindelia Robusta, Herb, bale .....lb.	.10	.11	.12	.10	.12	.08½
Guaiac Gum, 150 lb cases....lb.	.33	.34	.38	.33	.40	.33
Strained 75 lb cases...lb.	.70	.75	.75	.70	.75	.70
Guarana, tin cases.....lb.	2.75	3.00	3.00	2.50	2.75	1.65
Hellebore Root, Black, bbls. lb.	.05½	.06	.06	.05½	.06	.05½
White, 250 lb bbls.....lb.	.07¾	.08½	.08½	.07¾	.08½	.07¾
Powdered.....lb.	.11	.12	.12	.11	.14	.11
Helonias Root, bags.....lb.	.62	.64	.72	.62	.80	.67
Hemp Seed, bags.....lb.	.05	.06	.06	.05	.07	.03½
Henbane Leaves, USP, bales.lb.	.18	.19	.20	.18	.23	.18
HENNA LEAVES, bales....lb.	.12	.13	.13	.12½	.13	.12½
Powdered.....lb.	.15	.16	.17	.15	.17	.16
Hops, bales.....lb.	.....	.32	.32	.32	.32	.25½
Horehound, Herb, bales.....lb.	.08	.09	.09	.08	.09	.07
Hydrangea Root, bales.....lb.	.....	.09	.09	.08	.09	.08
Insect Flowers.....lb.	.35	.37	.37	.35	.35	.22
Powdered, Pure, 200 lb bb .....lb.	.38	.40	.46	.38	.45	.32
IPECAC ROOT, Carteagna, bags.....lb.	2.95	3.20	3.35	2.70	3.30	2.35
Powdered, 220 lb bbls...lb.	3.25	3.40	3.80	3.20	3.65	3.15
Rio Whole, bags.....lb.	3.00	3.20	3.20	2.85	3.40	2.80
Powdered, 110 lb bbls...lb.	3.40	3.50	3.50	3.40	3.50	3.25
Isinglass, American, 130 lb cases .....lb.	.95	1.00	1.00	.95	1.00	.95
Russian (Beluga), boxes...lb.	4.50	.....	4.50	4.50	4.50	4.50
Jaborandi Leaves, bales.....lb.	.12	.12½	.12	.11½	.13	.13
Jalap Root, Whole, 150 lb bag.....lb.	.24	.27	.37	.24	.21	.16
USP, Powd, 250 lb bbls....lb.	.29	.32	.42	.29	.26	.22
Japan Wax 24 lb cases.....lb.	.18½	.19	.19	.18½	.19	.18½
JUNIPER BERRIES, 125 lb bags.....lb.	.07½	.08	.09	.05	.07½	.05
Kamala, boxes.....lb.	1.35	1.40	1.40	.95	1.00	.85
Karaya Gum, Powdered, bbls .....lb.	.12	.20	.20	.12	.13	.12
Kava Kava Root, bags.....lb.	.14	.....	.15	.14	.16	.15
Kino Gum, Black, cases.....lb.	.50	.55	.55	.50	.55	.50
Kola Nuts, 150 lb bags.....lb.	.14	.15	.15	.13	.15	.09
Lady Slipper Root, bags....lb.	.90	1.00	1.30	.85	1.75	.78
Larkspur Seed, bags.....lb.	.50	.55	.55	.40	.45	.30
Laurel Berries, bags.....lb.	.08	.09	.09	.08	.09	.08
Leaves, Greek, bags.....lb.	.05½	.06	.06	.05	.07	.04½
Italian, bales.....lb.	.03½	.04	.04	.03½	.05	.03½
Lavender Flowers, Ordinary.lb.	.32	.35	.35	.32	.35	.30
Selected.....lb.	.42	.43	.45	.43	.55	.40
Lemon Peel, bags.....lb.	.09½	.10½	.13	.10	.10	.09½
LICORICE ROOT, Whole bbls .....lb.	.12	.18	.18	.12	.18	.12
Spanish Natural bales....lb.	.05½	.07	.07	.05½	.07	.05½
Powdered, bbls.....lb.	.09	.10	.10	.09	.10	.09
Selected 2 & 5 lb bdls....lb.	.13	.15	.15	.12½	.16	.12½
Cutting, 125 lb bags....lb.	.06½	.07	.07	.06½	.07	.06½
Turkish, 150 lb bales.....lb.	.05	.....	.05	.05	.05	.05
Linden Flowers with leaves, bales.....lb.	.24	.25	.27	.24	.33	.29
Without leaves, bales...lb.	.30	.31	.32	.30	.36	.27
Liverwort Leaves, bales.....lb.	.18	.19	.20	.18	.20	.16
Lobelia, Herb, bales.....lb.	.13	.14	.16	.13	.20	.15
Seed, bags.....lb.	.45	.50	.65	.45	.75	.65
Lovage Root, Imp., bags....lb.	.35	.37	.37	.25	.27	.25
Lupulin N. F., tins.....lb.	1.75	.....	1.75	1.75	1.75	1.75
Lycopodium, 88 lb. cases....lb.	.73	.75	.85	.73	1.00	.70
MACE SIAUW, No. 1, cases .....lb.	.85	.86	.86	.82	.98	.88
Banda No. 1, cases.....lb.	.95	.96	.98	.95	1.00	.94
Batavia No. 2, cases.....lb.	.54	.55	.58	.54	.68	.56
Malva Flowers, Blue, bales..lb.	.40	.42	.52	.40	.70	.45
Black, bales.....lb.	.40	.55	.60	.40	.60	.45
Leaves, bales.....lb.	.14	.15	.15	.14	.15	.14
Manaca Root, bales.....lb.	.22	.....	.22	.22	.22	.22
Manna, Large Flake, cases...lb.	.75	.77	.82	.75	.80	.65
Small Flake, cakes.....lb.	.52	.55	.60	.52	.60	.50
Sorts, cases.....lb.	.45	.50	.50	.45	.50	.45
Mandrake Root, bags.....lb.	.12	.13	.14	.12	.18	.13
Marjoram, Herb.....						
French, No. 1 bales.....lb.	.16½	.17½	.19	.16½	.18½	.13½
German, bales.....lb.	.22	.22½	.23	.22	.18½	.12
Mastic Gum, 120 lb cans....lb.	.65	.70	.70	.65	.70	.60



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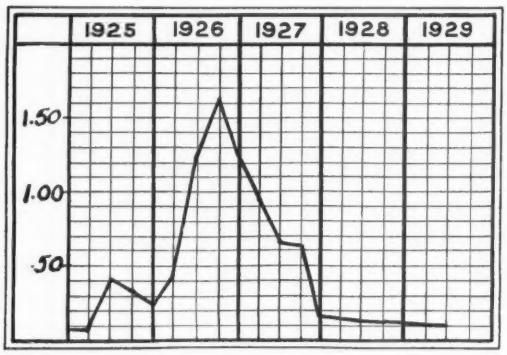
{ *Monthly Review* }

Firmness in Saw Palmetto Berries?

Although saw palmetto berries have been in excess supply, and although offerings from Florida, where they are gathered, have gone begging, a condition has arisen that might cause the large supply of this drug to be greatly curtailed.

The Mediterranean Fruit Fly—a pest found in Central Florida last April—has been destroying large quantities of the citrus fruits of that State. The fight against this pest has assumed national proportions and the federal government, acting under a special act of Congress, has appropriated $4,250,000 to carry on the work of eradication. Governor Doyle of Florida recently released a State emergency fund of $50,000. The Florida State Senate passed a bill appropriating $500,000 for the fight with but one dissenting vote.

But what has this to do with saw palmetto berries? The fact of the matter is that berry of the saw palmetto—which grows wild and in great numbers in most sections of the state—is believed to be a host plant for the fruit fly



**Saw Palmetto Prices:
Dollars per Pound**

The state and federal forces in charge of the destruction of the pest has established Zones No. 1, 2 and 3. Zone 1 includes everything within one mile of one fruit fly. All fruits and plants which are hosts to the fly in this area must be destroyed. Zone 2 includes the area within nine miles of Zone 1. Special permits are required for the shipment of fruits and vegetables out of this area. Also all waste fruits and vegetables in this area must be immediately cleaned up. Zone 3 includes the balance of the state. In this zone permits are required for shipments of some products within the state although no permit is required for the intrastate shipment of saw palmetto berries. However, eighteen states of the Union have been closed to many Florida fruits and vegetables by federal order and for these shipments a permit is required for saw palmetto berries.

Another regulation is that fruits and vegetables subject to fruit fly attack will not be permitted to mature in the infected areas designated as Zone 1. In areas known as Zone 2, the federal regulations provide for a six-month host-free period, during which no fruits or vegetables host to the fly can mature.

Fourteen carloads of machinery have been sent to Orange County by the federal government to be used in

		Current Market	1929 High	1929 Low	1928 High	1928 Low
Matico Leaves, bales	lb.	.30	.31	.32	.30	.45	.31
Mezereon Bark, bags	lb.	.20	.25	.25	.20	.35	.20
Millet Seed, Yellow, bags	lb.	.03½	.04½	.04½	.03½	.04½	.03½
Montan Wax, Crude, bags	lb.	.06½	.07	.07	.06½	.07	.06½
Bleached, bags	lb.	.25	.28	.28	.25	.28	.25
Moss, Iceland, bales	lb.	.10	.12	.11	.10	.12	.07½
Irish, Bleached, bales	lb.	.13	.16	.18	.13	.18	.11
Mullein Flowers, tins	lb.	2.00	.....	2.00	2.00	2.25	2.00
Leaves, bales	lb.	.07½	.08	.08	.07½	.08	.07½
Musk Root, Russian, bags	lb.	.09	.10	.12	.09	.25	.11½
Myrrh Gum, 200 lb, cases	lb.	.38	.41	.65	.41	1.10	.55
Nutgalls, Chinese, bags	lb.	.22	.....	.22	.22	.22	.22
Aleppy, bags	lb.	.21	.....	.21	.21	.25	.21
Powdered, bags	lb.	.23	.....	.23	.23	.23	.23
Nutmegs, 110's cases	lb.	.28	.29	.31½	.28	.38	.30
75's & 80's cases	lb.	.38	.39	.42	.38	.50	.42
Grinding, bags	lb	.24	.25	.25	.24	.29	.26½
NUX-VOMICA Buttons, bag	lb.	.05	.06	.06	.05	.05½	.04
Powdered, 200 lb bbls	lb.	.08	.08½	.08½	.08	.08½	.08
Oak Bark, bags	lb.	.05	.05½	.05½	.05	.06½	.05
Olibanum Gum, 280 lb cases							
Siftings	lb.	.13½	.15	.15	.13	.11½	.13
Tears, No. 1 Extra	lb.	.29	.30	.29	.27	.30	.26
No. 2	lb.	.20	.22	.22	.19	.20	.18
No. 3	lb.	.16	.18	.18	.15	.17	.14
Opium Gum, USP, cases	lb.	12.00	13.00	13.00	12.00	13.00	12.00
Granular, cans	lb.	13.00	14.00	14.00	13.00	14.00	13.00
Powdered, USP, cans	lb.	13.00	14.00	14.00	13.00	14.00	13.00
Orange Flowers, cases	lb.	.25	.....	.25	.25	.25	.25
Peel, Bitter, bags	lb.	.11	.12	.12	.10	.11	.10
Sweet bags	lb.	.14	.15	.15	.11	.08½	.08½
ORRIS ROOT, Flor. bid. bags	lb.	.26	.27	.27	.17	.14½	.10
Powdered, 200 lb bbls	lb.	.27	.28	.28	.21	.17	.13
Verona, bags	lb.	.23	.24	.25	.16	.13	.09
Powdered, 200 lb bbls	lb.	.27	.28	.29	.20	.14	.11
Fingers, boxes	lb.	1.15	1.20	1.20	.90	.90	.80
Ozokerite Wax, Brown, Hard	lb.	.....	.....	.....	.....	.....	.....
Bags	lb.	.24	.25	.25	.24	.25	.24
Green, Hard, bags	lb.	.30	.31	.31	.30	.31	.30
Yellow, Refined, bags	lb.	.37	.....	.37	.37	.37	.37
Papain, Crude, 150 lb cases	lb.	2.95	3.00	3.50	2.95	4.90	3.45
Pure, Powdered, 10 lb bot	lb.	3.05	3.10	3.55	3.10	4.35	3.50
Paprika, bags	lb.	.29½	.30	.33	.29	.33	.23
Pareira Brava Root, bags	lb.	.13	.14	.14	.11	.12	.11
Passion Flower, bales	lb	.70	.75	.75	.14	.15	.06½
Patchouli Leaves, bales	lb.	.22	.23	.23	.22	.29	.22
Pennyroyal, Herb, 100 lb bags	lb.	.07	.....	.07	.07	.07	.07
Leaves, 100 lb bags	lb.	.14	.16	.16	.14	.16	.14
PEPPERMINT LEAVES, Imp	lb.	.43	.45	.45	.43	.50	.43
bales	lb.	.30	.31	.31	.24	.40	.24
Domestic, bales	lb.	.13	.14	.16	.13	.14	.13
Pichi Leaves, bags	lb.	.27½	.30½	.30½	.22	.23	.16½
Pimento Select, bags	lb.	.55	.57	.60	.55	.75	.58
Pink Root, True, bags	lb.	.21	.22	.28	.21	.28	.22
Pleurisy Root, bags	lb.	.....	.25	.30	.20	.30	.20
Poke Berries, bags	lb.	.08	.08½	.08½	.07½	.10	.07½
Root, 200 lb bales	lb.	.30	.35	.35	.20	.44	.20
Pomegrant Bark of Root, bags	lb.	.25	.30	.30	.25	.30	.30
Bark of Fruit, bags	lb.	.18	.22	.22	.15	.21	.15
Bark of Tree, bags	lb.	.55	.60	.60	.50	.65	.50
POPPY FLOWERS, Red, bags	lb.	.50	.....	.50	.50	.50	.08
Heads, bags	lb.	.14	.17	.17	.14	.17	.14
Prickly Ash Bark	lb.	.13½	.14	.14	.13½	.16	.13½
Southern bags	lb.	.16	.17	.18	.16	.25	.16
Northern, bags	lb.	.20	.21	.21	.19	.22	.17½
Berries, bags	lb.	.33	.35	.35	.15	.17	.14
Prince's Pine, bales	lb.	.12	.13	.14	.12	.14	.11
Pulsatilla, Herb, bags	lb.	.14	.15	.15	.14	.25	.14
Pumpkin Seed, bags	lb.	.06½	.....	.06½	.06½	.06½	.06½
Quassia Chips, bags	lb.	.30	.31	.31	.29	.36	.29
Quebracho, bulk, 125 lb. bbl	lb.	.....	.07	.07	.07	.08	.07
Root, bags	lb.	.70	.80	.80	.70	.80	.60
Quince Seed, bags	lb.	1.10	1.25	1.25	1.10	1.50	.95
Cape, bags	lb	.05	.06	.06	.05½	.06½	.04½
Rape Seed, South American, bags	lb.	.07	.07½	.07½	.06	.07½	.05½
Dutch, bags	lb.	.06	.06½	.07	.06	.07	.06½
Japanese, small bags	lb.	.50	.60	.60	.45	.85	.45
Raspberries, Dried, bbls	lb.	.08	.....	.08	.08	.08	.08
Red Saunders, bags	lb.	.12	.13	.13	.11	.12	.11
Rhatany Root, bags	lb.	.36	.37	.41	.36	.45	.38
Rhubarb Root, HD, cases	lb.	.41	.42	.46	.41	.53	.43
Powdered, bbls	lb	.05½	.06	.06	.04½	.06	.04½
Rosemary Leaves, bales	lb.	.25	.30	.30	.25	.30	.25
Flowers, cases, bales	lb.	.40	.41½	.42½	.40	.45	.38
Rose Petals, pale	lb.	1.65	1.70	1.80	1.65	2.20	1.70
Red	lb.	.18	.20	.20	.18	.20	.18
Rue, Herb, bales	lb.	.29	.30	.34	.29	.35	.30
Sabadilla Seed, bags	lb.	.30	.31	.39	.30	.38	.32
Powdered, bbls	lb.	.34	.39	.40	.34	.40	.29½
SAFFRON FLOWERS, American, bales	lb.	11.25	11.75	12.00	11.00	16.00	11.25
Valencia, 1 lb cans	lb.	.05½	.06	.06	.05½	.07	.05½
Sage Dalmatian, bales	lb.	.05½	.06	.06	.05½	.06	.04½
Greek, bales	lb.	.70	.75	.75	.40	.43	.30
Sandarac Gum, 300 lb bbls	lb.	.54	.55	.55	.54	.58	.52
Sarsaparilla Root, Honduras, bales	lb.	.28	.30	.40	.26	.29	.20
Mexican, bales	lb.	.14	.16	.16	.14	.17	.13½
Sassafras Bark, Ordinary, bales	lb.	.24	.26	.28	.24	.27	.23
Select, bales	lb.	.08½	.09	.09	.08½	.10	.07½
Savory Leaves, bale	lb.	.10	.11	.12	.10	.20	.11
Saw Palmetto Berries, bags	lb.						

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{ Monthly Review }

the wholesale destruction of fruit in the quarantine area. This equipment consists of tractors, dredges, grinders, sprayers, etc.

Although, as one crude drug importer stated, it would be necessary to go up one side of the state and down the other to completely destroy the saw palmetto, the destruction of the plants; the inability to allow them to mature; and the inability to ship them into many states might easily result in a decidedly firmer market and higher prices.

Of course the extent to which this condition will be reflected in the market for saw palmetto berries is bound up with the sections of the state affected compared with the sections in which the gatherers have been operating, together with the size of the stocks in the hands of the crude drug dealers, and the position of consumerss.

As to the positions of consumers and dealers, it might be quite safely assumed that there has been no pressure upon either of them to carry large stocks of berries since all have known that the market was largely over-supplied.

Gum Arabic Holds Advance

Gum arabic exports from the Sudan in 1928 established a record, 22,777 tons valued at 724,468. Recently the trade situation has been changed by a phenomenal rise in the buying price in Kordofan from the year's previous average of 53 piastres to 107 piastres. The rise may be attributed to late arrivals owing to the cold weather or to competitive buying to meet heavy forward selling. The future, however, is promising in view of the increase in supply and trade due to better communication and new sources.

The current spot market remains unchanged at 20c to 23c as to quantity.

Gum Benzoin imports into Singapore totaled 5,012 piculs, according to the incomplete records published by the Singapore Chamber of Commerce. From Delti 540 piculs; from Palembang 1,649 piculs; from Baros 1,283 piculs; from Sibolga 1,525 piculs, and from Penang 15 piculs. (The picul equals 133.33 pounds).

Thirteen firms were responsible for these imports. However, many of the firms listed bought through indirect agents and strictly speaking were not in a position to do a direct business. One firm alone accounted for nearly 50 per cent. of the total; two others for eight per cent. each, and the rest was distributed among other firms, reports Trade Commissioner Donald Renshaw, Singapore.

Kola nuts are higher selling spot at 15c to 17c. This is caused primarily to rejection by the Department of several lots because of the presence of considerable mold. Prices for shipment have not changed any so that the increase in price of 2c per lb. is merely a temporary spot condition, rejections having caused a shortage here. The Department wants these moldy shipments picked over by hand but as this is rather a costly proposition it is more economic to discard the lots and await the arrival of fresh shipments.

Cascara is quoted at 14c to 15c spot. Coast prices, however, are being made slightly higher than have previously been reported, This will be an interesting item to watch as demand is very good and an upward tendency in price is expected.

	Current Market		1929 High	1929 Low	1928 High	1928 Low
Scammony Resin, boxes.....lb.	1.30	1.35	1.35	1.30	1.35	1.30
Root, bags.....lb.	.08½	.....	.08½	.08½	.08½	.08½
Senega Root, bags.....lb.	1.32	1.35	1.35	1.32	1.40	1.27
SENNA ALEX., 150 lb cases lb.	.25	.30	.30	.25	.30	.25
Half leaf 150 lb cases....lb.	.12½	.14½	.15	.12½	.15	.13
Sifting, 400 lb bales...lb.	.11	.11½	.11½	.10½	.11	.10½
Tinnevelly, Bold, 350 lb bales .....lb.	.16	.18	.18	.16	.20	.15
Medium Leaf.....lb.	.11	.12	.12	.10	.13½	.09
Small Leaf.....lb.	.07	.09	.10	.07	.10	.07
Pods, 350 lb.....lb.	.08½	.08¾	.09	.08¼	.13	.08½
Powdered, 200 lb.....lb.	.....	.11	.11	.11	.10	.11
Serpentaria Root, bags.....lb.	.68	.71	.72	.65	.77	.70
Shellac, T. N., bags.....lb.	.57	.58	.58	.57	.58	.57
Simaruba Bark, bales.....lb.	.20	.25	.40	.20	.38	.08
Skullcap Leaves, Eastern, bales .....lb.	.....	.40	.40	.40	.40	.33
Western, bales.....lb.	.18	.19	.20	.18	.26	.18
Skunk Cabbage, Striped, bales .....lb.	.14	.16	.16	.14	.16	.14
Snake Root, Canada Natural, bags.....lb.	.27	.28	.28	.24	.30	.24
Canada, Stripped, bags...lb.	.55	.....	.55	.55	.55	.55
Soap Bark.....lb.	.14	.15	.15	.14	.15	.14
Cut, 125-175 lb bags...lb.	.14½	.....	.16	.14½	.17	.16
Crushed, 200 lb bbls....lb.	.16	.....	.16	.16	.17	.16
Powdered, bbls.....lb.	.17	.....	.17	.17	.18	.18
Spearmint Leaves, American, bales.....lb.	.26	.31	.31	.25	.30	.25
Spermaceti, blocks, cakes, cases .....lb.	.32	.35	.35	.32	.35	.32
Spikenard Root, bags.....lb.	.18	.18½	.20	.18½	.25	.20
Squaw Vine, bales.....lb.	.20	.21	.21	.18	.21	.21
Squills, White.....lb.	.09	.10	.13	.09	.16	.08
Powdered, bulk.....lb.	.23	.25	.25	.20	.30	.15
Stavesacre Seed, bags.....lb.	.16	.17	.18	.16	.18	.15½
Stillingia Root, bags.....lb.	.10	.11	.12	.10	.12	.10
Stone Root, bags.....lb.	.08	.09	.09	.08	.09	.08
St. Ignatius Beans, bags....lb.	.14½	.15	.15	.14½	.15	.14½
St. John's Bread, bags.....lb.	.....	.09	.09	.09	.14½	.09
STRAMONIUM LEAVES, bales.....lb.	.18	.20	.20	.18	.20	.16
Seed, bags.....lb.	.07½	.....	.07½	.07½	.07½	.07½
Strophanthus Seed, Kombe, bags.....lb.	2.00	2.25	2.25	2.00	3.00	2.00
Styrax Liquid, Artificial.....lb.	.26	.35	.35	.26	.35	.26
Genuine, USP.....lb.	.40	.45	.45	.40	.45	.36
Sunflower Seed, bags Calif...lb.	.06	.07	.07	.06	.09	.06
South American, bags....lb.	.07	.07½	.07½	.07	.07½	.06
Tamarinds, bbls.....lb.	.09½	.10	.10	.05	.06	.05
Kegs.....keg	3.85	.....	3.75	3.85	3.85	3.85
Tansy, Herb, bales.....lb.	.15	.16	.16	.11	.14	.11
Thus Gum, 280 lb bbls.....lb.	.11½	.20	.20	.11½	.20	.11½
THYME, Spanish, bales....lb.	.11½	.12	.12	.08½	.09	.08½
French, bales.....lb.	.08	.08½	.08½	.08	.08½	.07
Tonga Root, bundles.....lb.	.42	.....	.42	.42	.55	.42
Vine, bundles.....lb.	.42	.....	.42	.42	.55	.42
Tonka Beans, Angostura Cases .....lb.	1.90	2.00	2.00	1.90	2.00	1.90
Para cases.....lb.	.90	.....	.90	.90	.90	.90
Surinam cases.....lb.	1.25	1.50	1.50	1.25	1.50	1.25
Tragacanth Gum, No 1, 100 lb cases.....lb.	1.45	1.50	1.60	1.50	1.60	1.55
No. 2.....lb.	1.40	1.50	1.50	1.40	1.50	1.40
No. 3.....lb.	1.25	1.30	1.30	1.25	1.30	1.25
Powdered, 50 lb boxes....lb.	1.00	1.10	1.10	1.00	1.10	.85
Turkish cases.....lb.	.45	.....	.45	.45	.45	.45
Turmeric Root Madras, bags.lb.	.08½	.08¾	.09	.08½	.12	.06
Aleppy bags.....lb.	.09½	.10	.10	.09½	.13	.06½
Powdered.....lb.	.13	.15	.15	.13	.15	.10
China bags.....lb.	.11	.12	.12	.11	.11	.09
Turpentine Venice True, 80 lb cases.....lb.	.32	.40	.40	.32	.40	.3
Artificial, 80 lb cases.....lb.	.17	.....	.17	.17	.17	.12
Uva Ursi Leaves, balks.....lb.	.06	.06½	.06½	.06	.07	.07
Valerian Root, Belgium, bags .....lb.	.23	.28	.30	.23	.30	.16
VANILLA BEANS, Mexican, whole, cases..... lb.	3.25	4.00	4.00	3.25	4.00	4 3.25
Cuts, cases..... lb.	2.62½	2.86½	2.86½	2.50	2.75	2.50
Bourbon, cases..... lb.	2.00	2.50	2.50	1.85	2.75	2.00
South American, cases....lb.	2.50	2.75	2.75	2.50	2.75	2.50
Tahiti, Green, label cases..lb.	2.25	2.50	2.50	2.25	2.50	2.25
Vetivert Root, 100 lb bags..lb.	.25	.....	.25	.25	.30	.25
Violet Flowers, bags.....lb.	.75	.80	1.00	.68	.90	.63
Wahoo Bark of Root, bags..lb.	.50	.51	.56	.51	.62	.51
Bark of Tree, bags.....lb.	.25	.26	.31	.25	.35	.25½
White Pine Bark, Roseed, bags .....lb.	.07½	.09½	.15	.07	.08	.07
White Poplar Bark, bags...lb.	.06	.07½	.07½	.05½	.07	.05½
Wild Cherry Bark, Thin, Green .....lb.	.14	.15	.20	.14	...	.....
Rossed bales.....lb.	.11	.12	.12	.11	.12	.11
Thick Rossed, bales....lb.	.09	.....	.09	.09	.09	.09
Thin Natural, bales...lb.	.08	.09	.09	.07½	.08	.07½
Thick Natural, bales...lb.	.06	.06½	.06½	.05	.06	.05
Wild Indigo Root, bags.....lb.	.14	.15	.15	.13	.14	.13
Willow Bark, bags.....lb.	.05	.05½	.05½	.05	.06	.05
White, bags.....lb.	.15	.....	.15	.15	.05	.15
Witch Hazel Bark, bags....lb.	.07	.08	.08	.05½	.08	.06½
Leaves, bales.....lb.	.07	.08	.08	.06½	.....	.....
Wormseed, American, bags..lb.	.10	.11	.13	.10	.20	.15
Levant, bags.....lb.	3.95	4.10	4.15	3.95	5.25	4.25
Wormwood, Herb, Imp., bales .....lb.	.08	.08½	.10½	.08	.10½	.10
Dock Root, bags.....lb.	.10	.11	.11	.10	.11	.10
Yerba Mate, bags.....lb.	.18	.20	.20	.18	.20	.18
Santa, bags.....lb.	.10	.11½	.11½	.09½	.11	.90½
Zedoary Root, bags.....lb.	.07	.08	.08	.06½	.07	.06½

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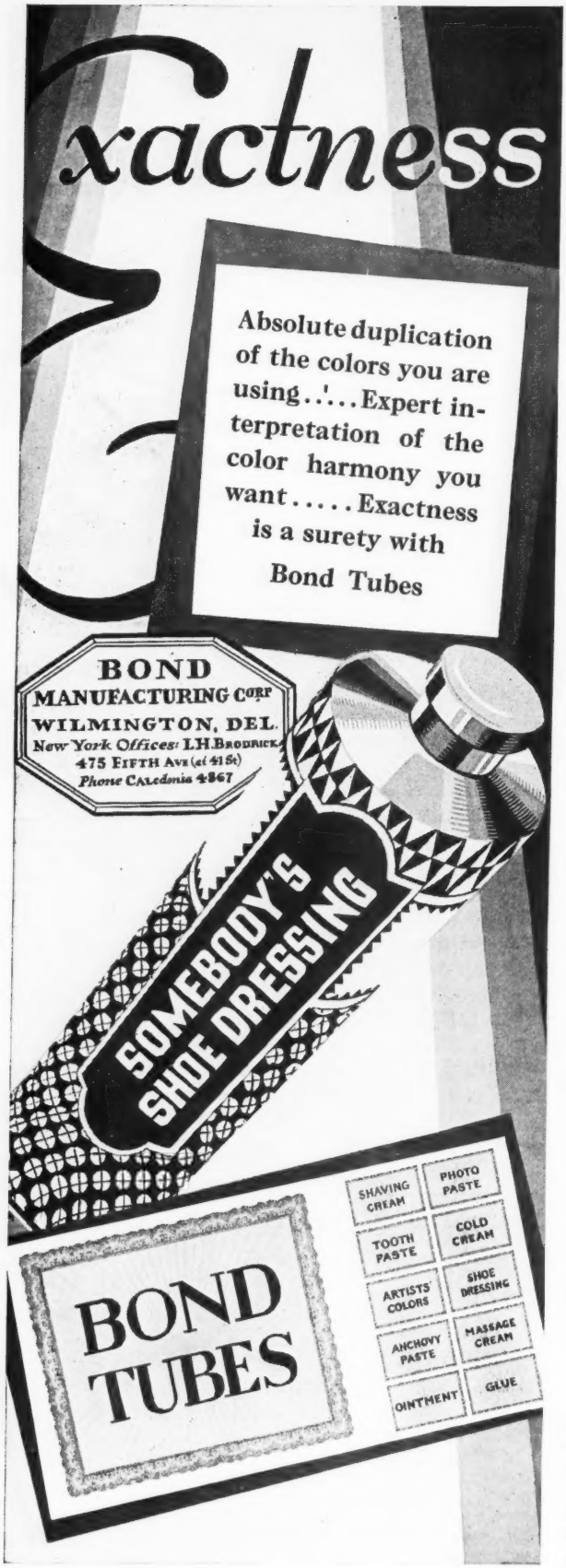

Agri. Dept. Goes After Advertising Control

(*Continued from page 21*)

methods of competition. This latter law is not a criminal statute, whereas the food and drug act is.

On the other hand, prominent officials of the Department of Agriculture having to do with drugs assert that they have information that there is a great and growing sentiment in favor of drug advertising regulation under the food and drug act. Said one official:

"I have been told by manufacturers of honest drug products, by senators and representatives in Congress, and by representatives of important trade associations and trade organizations that there should be such regulation, which they favor. In my opinion, it is inevitable, sooner or later. The drug trade, as well as the manufacturers and advertisers of other products may just as well realize now as later that the manufacturers of honest and pure medicinal preparations and other products are determined that false, misleading, fraudulent, deceptive advertising has got to stop. Honest manufacturers believe that they are entitled to have it stopped, and if the dishonest manufacturers and advertisers do not stop these practices voluntarily, then it is as certain as that night follows day that there will be a law passed that will enable us to stop it. I feel and honest manufacturers and advertisers feel that they are entitled to this protection, and, in my opinion, they will get it."

Value of Germicides

(*Continued from page 27*)

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The Federal Trade Commission issues complaint against C. H. Selick, Inc., New York, claiming unfair competition in use of the word "Paris" on perfumes manufactured in this country from French essential oils.

The mixture sold under the labels: "L'Arc Narcisse-Jardeau-New York, Paris," etc. constitutes, according to the complaint, unfair competition in that it deceives dealers and the consuming public into believing that the perfumes are imported.

Stabilization of Botanicals

(*Continued from page 53*)

The same arrangement is used with carbon tetrachloride. The vapors are produced by heating the liquid contained in a flask.

As far as the determination of the active principles in these plants and herbs is concerned, and their pharmaceutical products as well, the authors employed the volumetric method described in the Pharmacopoeia, which is based on their isolation and the determination of the alkalinity. They also used for comparative purposes their own mercurimetric method which is described in Chimie et Industrie, Report of the Sixth Congress and in Journal Pharm. Chimie, volume 4, December 16, 1926.

Conclusions

The authors have been able to draw the following conclusions from their investigations.

1. The gaseous hydrocarbons, methane, acetylene and their halogenated derivatives, carbon tetrachloride and ethyl chloride, exert a morphological and chemical action of greater or lesser intensity on belladonna leaves and henbane and their pharmaceutical products, tinctures and extracts.

2. Acetylene is the only one of these hydrocarbons whose influence on the chemical processes of a diastatic nature is clearly defined.

3. Losses of active principles, losses which are always more accentuated in the same pharmaceutical forms which have not been stabilized, are always found after one year in tinctures and extracts of belladonna and henbane which have been prepared from the fresh or dried plants and herbs.

4. The loss of alkaloidal principles in pharmaceutical products which have been made from belladonna and henbane leaves, stabilized or not, can be explained as being due to their hydrolysis and decomposition in this complex medium. The loss of active principles is greater in the non-stabilized pharmaceutical products and it can, therefore, be stated that the stabilizing agents used exert an inhibitory action on the processes of decomposition.

5. The application of these hydrocarbons to plants, containing active principles of the glucosidal character, such as digitalis, cherry laurel, etc., is going to allow us to elucidate the question as to whether or not the stabilizing action of these hydrocarbons is combined with a diastatic process.

6. Physiological tests are alone decisive in judging the influence of these hydrocarbons on the active principles of plants, and to determine if their use for stabilizing the plants is recommendable from the therapeutic viewpoint.

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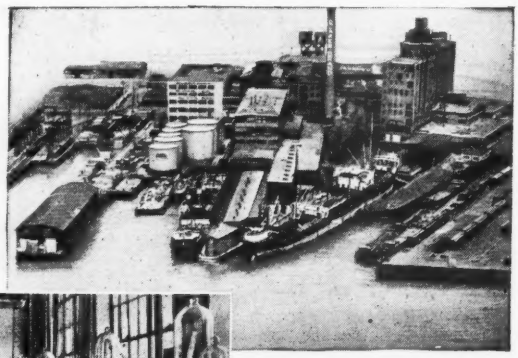

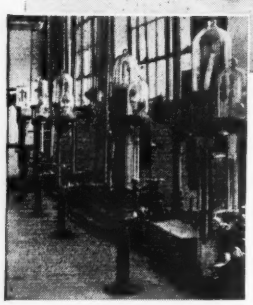

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The Lily Toilet Products Co., Orange, N. J. Dry wood. Capital $5,000. B. Williams, Orange, N. J.

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Remiller Corp., New York City. Chemicals. Capital 100 shares common. Rose & Paskus, 128 Broadway, New York, N.Y.

Chemed Laboratories, Brooklyn, N. Y. Chemicals. Capital 100 shares common. N. Siegel Jr., 250 West 57th St., New York, N. Y.

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Luna Laboratories, Wilmington, Del. Pharmaceutical products. Capital 3,500,000 shares common. Corporation Trust Co. of America, Wilmington, Del.

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Flora Aromatics Co., New York City. Chemicals. Capital $25,000. H. Escher, 14 Wall St., New York, N. Y.

Manhattan Chemical & Cosmetic Co., New York City. Capital 200 shares common. A Joseph, 51 Chambers St., New York, N. Y.

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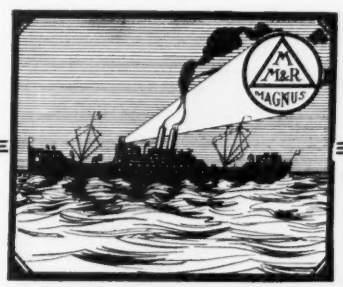

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Further analysis was made of the preparation and the final results showed that it was composed of 30% of fats, 45% of vaseline, 20% of talc, 2% of salicylic acid and 3% of water. C. A. Rojahn, Apotheker Zeitung, 1928, number 85, pages 1290ff.

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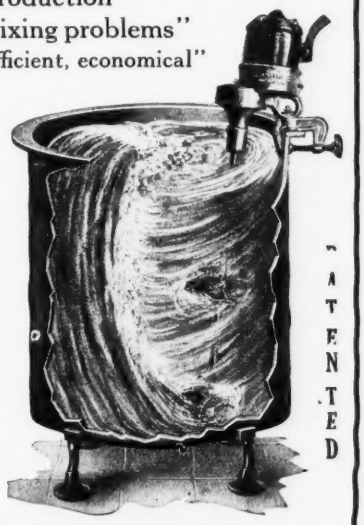

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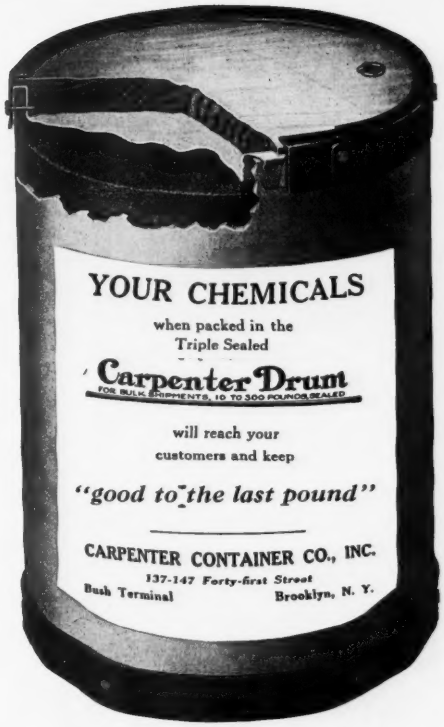

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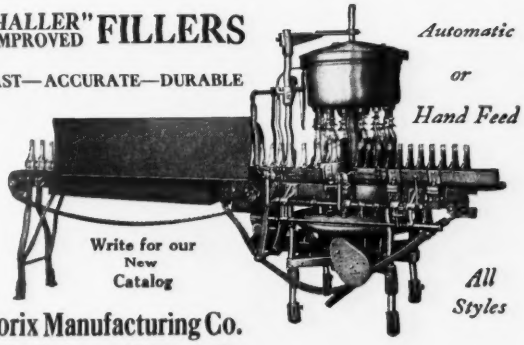

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